



PC-1

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF  
WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

ORIGINAL APPROVED COST	<b>PKR Million. 1,460.250/-</b>
ORIGINAL APPROVED GESTATION	<b>18 Months Till February 2025</b>
APPROVAL FORUM	<b>PDWP (PDWP)</b>

## **1. NAME OF THE PROJECT**

UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER  
TREATMENT PLANT (WWTP) GOJRA CITY

## **2. LOCATION OF THE PROJECT**

### **2.1. DISTRICT(S)**

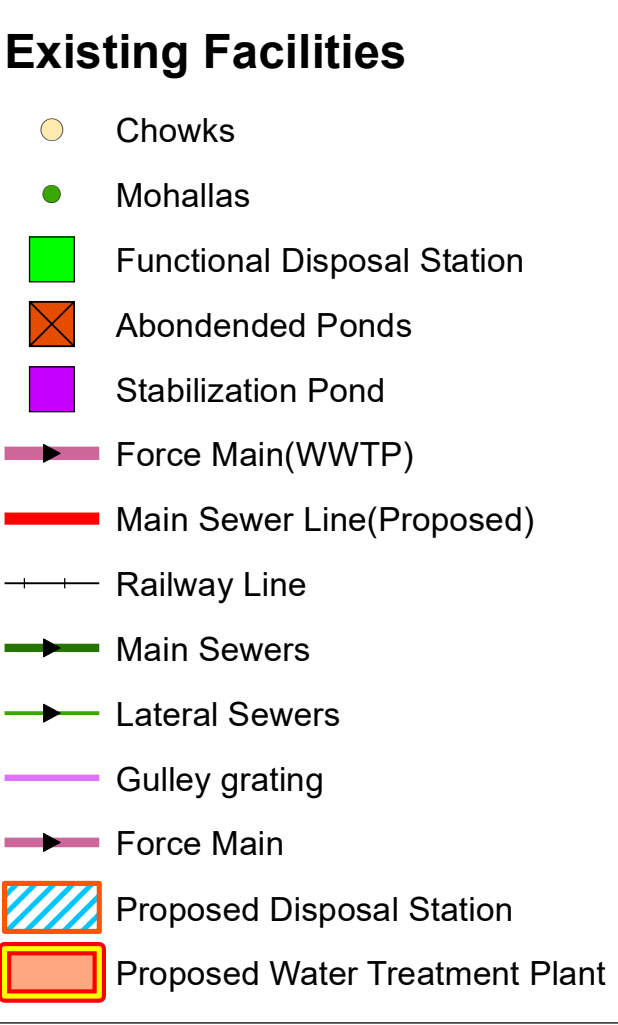
I. TOBA TEK SINGH

### **2.2. TEHSIL(S)**

I. GOJRA

## **ANNEXURE-A**

### **LOCATION PLAN**





### 3. AUTHORITIES RESPONSIBLE FOR

#### 3.1. SPONSORING AGENCY

- WORLD BANK

#### 3.2. EXECUTION AGENCY

- MUNICIPAL CORPORATION GOJRA
- PUNJAB LOCAL GOVERNMENT BOARD MUNICIPAL COMMITTEES

#### 3.3. OPERATIONS AND MAINTENANCE AGENCY

- LG&CD

#### 3.4. CONCERNED FEDERAL MINISTRY

- FINANCE, REVENUE AND ECONOMIC AFFAIRS

### 4. PLAN PROVISION

Sr #	Description
1	<b>Source of Funding:</b> Scheme Listed in ADP CFY
2	<b>GS No:</b> 1673
3	<b>Total Allocation:</b> 537.660

**Comments:**

N/A

### 5. PROJECT OBJECTIVES

As under

<p>5. Project objectives and its relationship with sector objectives</p>	<p><b><u>Sector Objectives</u></b></p> <p>The sector objectives include:</p> <ol style="list-style-type: none"> <li>1. Provision of efficient and effective municipality services to the masses.</li> <li>2. Improvement of existing sewerage system in Gojra City.</li> <li>3. To improve existing environmental conditions by provision of wastewater treatment facilities in Gojra City.</li> </ol> <p><b><u>Objectives of the Project</u></b></p> <p>The Program aims for improvement of Infrastructure of Municipal Services including Sewerage System to improve municipal service delivery.</p> <p>The Project comprises of the Replacement of old, outlived, damaged or worn-out components in existing infrastructure for; -</p> <ul style="list-style-type: none"> <li>▪ The existing sewerage system was laid against the Topographic conditions of the city. Hence, as soon the electric shutdown occurs the low-lying areas start overflowing. The resident of the areas is suffering bad environmental conditions and find difficult to move about in the waste water flooding.</li> <li>▪ To improve the service delivery by laying of trunk sewer according to topographic conditions. It will provide Improvement of service delivery level of the municipal services in the served areas of the city for provision of better basic urban services for improved livability of the citizen.</li> <li>▪ The new system is proposed to reduce in annual O&amp;M cost of the infrastructure due to reduced repairs in the forthcoming years because of repair or replacement of infrastructure components.</li> <li>▪ The major areas like Tehsil Headquarter Hospital, Ali Asghar Park, Hockey stadium which are adjacent to main Jhang road are without any proper sewerage system and hospital waste is being dispose off without any treatment. It is using by the formers for agriculture. The Gojra city is divided into 4 zones A, B, C &amp; D. Zone A, B &amp; C are partially served with sewerage system whereas, no sewerage network exists in zone D as well as north west areas of other zones are also without sewerage system. Overflow on the road are occurring resultantly, road network are damaging. MC Gojra spending huge funds for maintenance as well as reconstruction of road network. Municipal Committee has construct open drain for dewatering of wastewater and this wastewater is going to the agriculture form without any treatment.</li> <li>▪ On completion of scheme about one hundred thousand peoples will benefited with sewerage facility as well as improve the existing</li> </ul>
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	<p>areas. It will cause in reduction and prompt addressal of the public complaints regarding municipal service delivery.</p> <ul style="list-style-type: none"> <li>▪ The major areas are without sewer along the planned route of trunk sewer which will be benefited with sewerage facility and environmental condition will be improve.</li> <li>▪ The provide the wastewater treatment facility for reduction of BOD to bring the effluent within permissible limits of the NEQs and the treated water can used for irrigation.</li> <li>▪ With the improvement of environmental standards, the growth potential and the local economy of the city will be improved.</li> </ul> <p>Hence, the objectives of the project are in line with the sector objectives mentioned above and the project forms integral part of the concerned sector.</p>
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## **6. DESCRIPTION AND JUSTIFICATION OF PROJECT**

### **6.1 JUSTIFICATION OF PROJECT:**

As under

6. Description, justification, technical parameters and technology transfer aspects																																																																							
i. Present Condition																																																																							
ii. Description of the subproject-	<p>Details given</p> <ul style="list-style-type: none"> <li>➤ Municipal Committee shall insure the use of treated water for irrigation purpose.</li> <li>➤ Revenue Department approach to transfer the state land in favour of MC Gojra. It is mentioned here that said land is already in occupation of MC Gojra and remained in used as land fill site. The area of state land having 39.50 Acres for treatment of wastewater along with 4 kanal area for disposal station is in process.</li> </ul>																																																																						
iii Detail of civil works, equipment & machinery and other physical facilities	<p>The PC-I provides the below given components.</p> <p><b>1. Rehabilitation of Existing Sewerage system</b></p> <p>The rehabilitation of the system will comprise of below given components</p> <table border="1"> <thead> <tr> <th>SN</th><th>Components</th><th>Quantity</th></tr> </thead> <tbody> <tr> <td>1</td><td>RPC Manhole covers</td><td>690 Nos</td></tr> </tbody> </table> <p><b>2-Comprehensive sewerage system in Gojra City</b></p> <p>The newly proposed system in <b>Gojra City</b> will comprise of the below given components:</p> <table border="1"> <thead> <tr> <th>SN</th><th>Components</th><th>Quantity</th></tr> </thead> <tbody> <tr> <td>1</td><td><b>RCC sewers</b></td><td></td></tr> <tr> <td></td><td>a) 15" I/d</td><td>7450 Rft</td></tr> <tr> <td></td><td>b) 18" I/d</td><td>3150 Rft</td></tr> <tr> <td></td><td>c) 21" I/d</td><td>1010 Rft</td></tr> <tr> <td></td><td>d) 24" I/d</td><td>4387 Rft</td></tr> <tr> <td></td><td>e) 27" I/d</td><td>2408 Rft</td></tr> <tr> <td></td><td>f) 30" I/d</td><td>2105 Rft</td></tr> <tr> <td></td><td>g) 36" I/d</td><td>3129 Rft</td></tr> <tr> <td></td><td>h) 42" I/d</td><td>6930 Rft</td></tr> <tr> <td>2</td><td><b>Disposal Station</b></td><td></td></tr> <tr> <td></td><td>Screening chamber</td><td>1 No</td></tr> <tr> <td></td><td>Collecting tanks</td><td>1 No</td></tr> <tr> <td></td><td>Pump house</td><td>1 No</td></tr> <tr> <td>3</td><td><b>Pumping machinery</b></td><td></td></tr> <tr> <td></td><td>Non clogging cardon shaft sullage pumping units</td><td></td></tr> <tr> <td></td><td>8 Cusecs capacity</td><td>3 Nos</td></tr> <tr> <td>4</td><td>Force main 630mm dia</td><td>4.5 km</td></tr> <tr> <td>5</td><td>Transformer 400 KVA</td><td>1 No</td></tr> <tr> <td>6</td><td>Diesel Generating set 200 KVA</td><td>1 No</td></tr> <tr> <td>7</td><td>Change over switch</td><td>1 No</td></tr> </tbody> </table>		SN	Components	Quantity	1	RPC Manhole covers	690 Nos	SN	Components	Quantity	1	<b>RCC sewers</b>			a) 15" I/d	7450 Rft		b) 18" I/d	3150 Rft		c) 21" I/d	1010 Rft		d) 24" I/d	4387 Rft		e) 27" I/d	2408 Rft		f) 30" I/d	2105 Rft		g) 36" I/d	3129 Rft		h) 42" I/d	6930 Rft	2	<b>Disposal Station</b>			Screening chamber	1 No		Collecting tanks	1 No		Pump house	1 No	3	<b>Pumping machinery</b>			Non clogging cardon shaft sullage pumping units			8 Cusecs capacity	3 Nos	4	Force main 630mm dia	4.5 km	5	Transformer 400 KVA	1 No	6	Diesel Generating set 200 KVA	1 No	7	Change over switch	1 No
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		8	LT Control Panel with 5 MCUs	1 No	
	<ul style="list-style-type: none"> <li> <b>3-Waste water Treatment Plant</b> comprising of:           <ul style="list-style-type: none"> <li>a) Sewage Collecting pit / Chamber = 1 No</li> <li>b) Course &amp; fine Screening Chamber = 1 No</li> <li>c) Grit Chamber</li> <li>d) Sullage Drains</li> <li>e) Anaerobic ponds = 4 Nos</li> <li>f) Facultative ponds = 4 Nos</li> <li>g) Sludge drying beds = 4 No</li> <li>h) Administration block = 1 No</li> <li>i) Floating plants = 10% of Facultative ponds area</li> <li>j) Effluent water course = 1</li> <li>k) No</li> </ul> </li> </ul>				
iv Indicate governess issues of the sector relevant to the project and strategy to resolve them	<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>Municipal Committee Gojra City is facing acute shortage of local field staff. The operation &amp; maintenance of the project after completion can only be assured when the required staff is available with MC.</li> <li>The operation and maintenance of the municipal services in not up to the mark in the MCs. Capacity building under the Program, through trainings and seminars will be imparted by PMDFC to the officers as well as the field staff.</li> </ul> </li> </ul>				

## 6.2 SECTORAL SPECIFIC INFORMATION:

N/A

7. CAPITAL COST ESTIMATES:

Financial Components: Capital  
Cost Center:OTHERS- (OTHERS)  
Fund Center (Controlling):N/A

Grant Number:Engineering - (PC220036)  
LO NO:N/A  
A/C To be Credited:Assignment

PKR Million					
Sr #	Object Code	2023-2024		2024-2025	
		Local	Foreign	Local	Foreign
1	A06470-Others	0.000	1,460.250	0.000	0.000
Total		0.000	1,460.250	0.000	0.000

7- Capital Cost of Project	The summary of the works included in the project is given below; (All costs in million rupees)			
	Ser #	Description	Cost (RS.) In Millions	
	1	Package-1 Sewerage system	374.24	
	2	Package-2 Disposal station & Forcemain	449.30	
	3	Package-3 Providing and Fixing of RPC manhole Cover	10.23	
	4	Package-4 Construction of Wastewater Treatment Plant (WWTP)	456.90	
	5	Package-5 Supply of Liquid Waste Machinery	5.62	
	6	E & S cost	7.50	
		Total Cost (Rs.)	1303.79	
		Add 2% contingencies	26.08	
		Add 5% PST	65.19	
		Add 5% escalation	65.19	
		Grand Total Cost (Rs. In millions)	1460.25	
	Note: Keeping in view volume and nature of work it is proposed that estimate will get technical sanction on package basis. Accordingly, procurement will be carried out. The detail of costs has been given in <b>Annexure-B</b>			
	i- Indicate date of estimation of the project cost	The project estimates have been framed during the month of July, 2023.		
ii- Basis of determining the estimates be provided.	The cost estimates have been framed on the basis of bill of quantities actually measured at site and unit rates from the Market Rate System (MRS) issued by the Government of Punjab (District Toba Tek Singh 1 <sup>st</sup> biannual of year 2023). For items not available in the MRS, the same have been analyzed as per prevailing market rates.			
Provide year wise estimation of physical activities	The physical and financial requirements, year wise are included in the following table:			
	Ser #	Detail of subheads	Year 23-24	Year 24-25
	1	Package-1 Sewerage system	80%	20%
	2	Package-2 Disposal station & Forcemain	80%	20%

	3	Package-3 Providing and Fixing of RPC manhole Cover	100%	0	
	4	Package-4 Construction of Wastewater Treatment Plant (WWTP)	50%	50%	
	5	Package-5 Supply of Liquid Waste Machinery	100%	0	
	6	E & S cost	80%	20%	
		<b>Total Cost (Rs.)</b>			
		Add 2% contingencies	80%	20%	
		Add 5% PST	80%	20%	
		Add 5% escalation	80%	20%	
iv- Phasing of capital cost on the basis of each item of work.	The phasing of capital cost of the project is included in the following table: (All figures are in million rupees)				
	Ser #	Detail of subheads	Total	Year 23-24	Year 24-25
	1	Package-1 Sewerage system	374.24	299.39	74.85
	2	Package-2 Disposal station & Forcemain	449.30	359.44	89.86
	3	Package-3 Providing and Fixing of RPC manhole Cover	10.23	10.23	-
	4	Package-4 Construction of Wastewater Treatment Plant (WWTP)	456.90	228.45	228.45
	5	Package-5 Supply of Liquid Waste Machinery	5.62	5.62	
	6	E & S cost	7.50	6.00	1.50
		<b>Work outlay cost</b>	<b>1303.79</b>	<b>909.13</b>	<b>394.66</b>
		Add 2% contingencies	26.08	20.86	5.22
		Add 5% PST	65.19	52.15	13.04
		Add 5% escalation	65.19	52.15	13.04
		<b>Total project Cost</b>	<b>1460.25</b>	<b>1034.29</b>	<b>425.96</b>
	The PC-I has been framed in 5 package as given in the above-mentioned table because of below mentioned issues: 1. The cost of this mega project is very high and one contractor will not be able to execute all items of work in parallel.				



	<ol style="list-style-type: none"> <li>2. The time line available for the execution of the project is very narrow as the Punjab Cities Program has been extended up to June, 2025. For completion of the project within this timeline more than one contractor will have to be engaged.</li> <li>3. The residents of Gojra City are suffering from waste water flooding since long and they should be relieved from this panic as soon as possible. Engaging 5 contractors will get the project completed rapidly thus accruing early benefits to the public of Gojra City.</li> <li>4. Hence 5 package of the projects will be let out separately and the work will be completed in parallel on all parts</li> </ol>
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## 8. ANNUAL OPERATING COST (POST COMPLETION)

**Financial Components:** Capital  
**Cost Center:** OTHERS- (OTHERS)  
**Fund Center (Controlling):** N/A

**Grant Number:** Engineering - (PC220036)

**LO NO:** N/A

**A/C To be Credited:** Assignment

PKR Million

Sr #	Object Code	2025-2026		2026-2027		2027-2028		2028-2029		2029-2030	
		Local	Foreig	Local	Foreig	Local	Foreig	Local	Foreig	Local	Foreig
1	A06470-Others	35.27 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total		35.271	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

<b>8-Annual recurrent cost after completion of the project and source of financing</b>	<p>The annual O&amp;M cost will be around Rs. 35.271 million to run the system on sustainable basis. The source of financing O&amp;M cost will be borne by MC Gojra City. O &amp; M details have been attached in <b>Annexure-F</b>.</p>
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## 9. Demand and Supply Analysis:

As under

<b>9- Demand &amp; Supply Analysis</b>  i- Existing Capacity of services	<b>A.</b>	<b>B. Existing supply level</b> <ul style="list-style-type: none"> <li>● Municipal Committee Gojra City is unable to render satisfactory service to the entire area of the city because of degraded infrastructure wherein major replacements are direly needed but MC could not be able to accomplish them because of low revenue recovery and funding constraints. As a result, major areas are deprived of the required level of the service. This is resulting in low credibility of the municipal services and citizen dissatisfaction. Further, the municipal infrastructure has not been extended keeping in pace with the growth of population which has impacted the service delivery level of MC.</li> </ul>
ii- Projected Demand for 10 years	<ul style="list-style-type: none"> <li>●</li> </ul>	For meeting the needs of population up to year 2050, the proposed sewerage system including Rehabilitation of the existing system, laying of 9.68 km sewer lines, construction of 1 new disposal stations, construction of wastewater treatment plant (WWTP) will address the required municipal infrastructure coping with demand of population up to planning horizon.
iii- Capacity of other similar projects being implemented in public/private sector		No other project of this nature is being implemented in public as well as private sector. However, MC is trying to keep the services in operation with bare minimum repairs/replacements because of funding constraints.
iv- Supply and Demand gaps		The nature of supply and demand gap has been explained in the preceding paras which concludes; <ul style="list-style-type: none"> <li>● The existing infrastructure has poor efficiency resulting in unsatisfactory service delivery level.</li> <li>● The O&amp;M cost of the municipal services is very high because of low efficiency of the services infrastructure and high market rates while there in a large gap between the O&amp;M expenditure and the revenue recovery.</li> <li>● Large subsidies are being injected by MC to the keep the services in operation</li> <li>● Numerous public complaints are also registered on daily basis.</li> </ul> Hence, there is a large gap between the supply and demand which is to be bridged by improvement in the municipal infrastructure and its management.
v- Designed capacity and output of the project		Investments have been proposed for improvement of the existing infrastructure which will result in the under mentioned outputs; <ul style="list-style-type: none"> <li>● The new disposal station, drain and wastewater treatment plants will be constructed. This will address the issue of waste water flooding and disposing of untreated sewage into agricultural field and it will help to meet the requirements of NEQS.</li> <li>● By implementation of proposed project, improved sanitation conditions will be developed leading to improved service delivery by MC.</li> </ul>



## **10. FINANCIAL PLAN AND MODE OF FINANCING**

### **10.1 FINANCIAL PLAN EQUITY INFORMATION:**

As under

<b>10. Financial Plan</b> <b>Sources of financing</b> <u>Debt</u> a) Indicate the local and foreign debt Loan	<p>The below given loan for the Punjab Cities Program has been funded by World Bank for 16 PCP cities in Punjab.</p> <table border="1" data-bbox="459 280 1466 577"> <tr> <td>Total loan to Government of Pakistan/Punjab</td><td>200 million USD</td></tr> <tr> <td>Component-1 for Infrastructure Development</td><td>180 million USD</td></tr> <tr> <td>Component-2 for Investment Project Financing For capacity building of MCs &amp; three Govt. organization and program management.</td><td>20 million USD</td></tr> <tr> <td>20% share of Municipalities is equivalent to</td><td>36 million USD</td></tr> <tr> <td>Total funds available for Infrastructure Development</td><td>216 million USD</td></tr> </table> <p>Municipal Committee Gojra city is getting its share from this funding and depositing its 20% share of the total funding allocated to the MC. The project will be funded out of this allocation.</p>	Total loan to Government of Pakistan/Punjab	200 million USD	Component-1 for Infrastructure Development	180 million USD	Component-2 for Investment Project Financing For capacity building of MCs & three Govt. organization and program management.	20 million USD	20% share of Municipalities is equivalent to	36 million USD	Total funds available for Infrastructure Development	216 million USD
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20% share of Municipalities is equivalent to	36 million USD										
Total funds available for Infrastructure Development	216 million USD										
b-Equity	<p><b>A. Loan /Grant to MC</b>  The amount of loan converted to grant to Gojra City will be Rs <b>1168.20 million</b>. The financing of the project will be as given below:</p> <table border="1" data-bbox="507 878 1417 1048"> <tr> <td>Grant to MC (Loan from WB)</td><td>PKR 1168.20 million</td></tr> <tr> <td>20% Co-finance by MC</td><td>PKR 292.05 million</td></tr> <tr> <td><b>Total available funds (Total cost of PC-I)</b></td><td><b>PKR 1460.25 million</b></td></tr> </table> <p><b>B. Project Cost: PKR 1460.25 million</b></p> <p>*The loan is from World Bank to Government of Pakistan/Punjab, which will trickle down to Gojra MC as grant.</p>	Grant to MC (Loan from WB)	PKR 1168.20 million	20% Co-finance by MC	PKR 292.05 million	<b>Total available funds (Total cost of PC-I)</b>	<b>PKR 1460.25 million</b>				
Grant to MC (Loan from WB)	PKR 1168.20 million										
20% Co-finance by MC	PKR 292.05 million										
<b>Total available funds (Total cost of PC-I)</b>	<b>PKR 1460.25 million</b>										
c) Grants	No grant is being given by Government of Punjab out of ADP funds. The World Bank loan to Government of Pakistan/Punjab will trickle down as grant to MC from Government of Punjab.										
d) Weighted cost of capital	Nil										

## **10.2 FINANCIAL PLAN DEBT INFORMATION:**

N/A

## **10.3 FINANCIAL PLAN GRANT INFORMATION:**

N/A

## **10.4 WEIGHT COST OF CAPITAL INFORMATION:**

N/A

# **11. PROJECT BENIFITS AND ANALYSIS**

## **11.1 PROJECT BENEFIT ANALYSIS INFORMATION:**

As under

<b>11-Project Benefits and Analysis</b>	
Financial: Income to the project with assumption	<ul style="list-style-type: none"> <li>● The project comprises construction of new components the existing Municipal Infrastructure to improve the service delivery of MC and construction of new sewerage system in the unserved areas Presently, no user charges have been levied because of unsatisfactory service delivery but with improvement of service delivery, the consumers will be ready to pay user charges.</li> <li>● It is proposed to levy user charges on the service which will increase the income of the MC.</li> <li>● However, it is a social sector project and the capital cost of the project is not intended to be recovered. The user charges will be recovered from the consumers for meeting the operation and maintenance charges of the services and to lower down the heavy subsidies being injected by MC to keep the services in operation.</li> </ul>
i.Social benefits to the target group	<p>The completion of the project will result in:</p> <ul style="list-style-type: none"> <li>● Up gradation of the municipal services infrastructure.</li> <li>● Increase in efficiency of all infrastructure components</li> <li>● Improved service delivery level</li> <li>● Enhanced design life of the components.</li> </ul> <p>This in turn will result the following social benefits:</p> <ul style="list-style-type: none"> <li>● Improved hygienic conditions in the city</li> <li>● Reduction in vector breeding and generated diseases</li> <li>● Elimination of obnoxious smell</li> <li>● Reduction in medical expenditures by Public</li> </ul>
Environmental Impact negative/positive	<p>There will be moderate to significant level negative environment impacts including temporary deterioration in air quality, water pollution, wastewater pollution, change of land use etc. during and after implementation of the project. The Environment and Social Screening Checklists have been developed and attached as <b>Annexure-E</b>. According to World Bank E&amp;S screening and safeguards procedures and Punjab EPA Regulations, this project falls in the projects category where it requires to develop a detailed Environmental and Social Impact Assessment (ESIA) Report and obtain its NOC/Approval from PEPA. Economic Analysis attached as <b>Annexure-C</b></p>
Quantifiable project outputs	<p>The social benefits to the citizen have been described at Sr. No-11(ii).</p>

ii. Unit cost analysis	<p>The unit Capital cost analysis is produced below;</p> <table border="1" data-bbox="464 232 1455 427"> <tr> <td>Project capital cost of the Project</td><td>PKR 1460.25 million</td></tr> <tr> <td>Population in year 2023</td><td>85950 persons</td></tr> <tr> <td>Unit capital cost per capita</td><td>Rs. 16989.50</td></tr> </table> <p>The Unit O&amp;M cost per annum is given below</p> <table border="1" data-bbox="464 510 1455 703"> <tr> <td>Project O&amp;M cost per annum</td><td>PKR 45.78 million</td></tr> <tr> <td>Population in year 2023</td><td>85950 persons</td></tr> <tr> <td>Unit O&amp;M cost per capita per annum</td><td>Rs. 410.366</td></tr> </table>	Project capital cost of the Project	PKR 1460.25 million	Population in year 2023	85950 persons	Unit capital cost per capita	Rs. 16989.50	Project O&M cost per annum	PKR 45.78 million	Population in year 2023	85950 persons	Unit O&M cost per capita per annum	Rs. 410.366
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Population in year 2023	85950 persons												
Unit O&M cost per capita per annum	Rs. 410.366												
Employment generation direct and indirect)	<p><b><u>Employment Analysis</u></b></p> <p><b>Direct Employment</b></p> <p><b>a) <i>Planning and Design of Projects</i></b></p> <p>The Planning and Design of the project will be entrusted to local consultants who will be appointing staff and experts in different disciplines along with support staff. The Consultants will also appoint their staff for resident supervision of the Project to verify and certify the items of works to be executed under this PC-I.</p> <p><b>b) <i>Execution of the Project</i></b></p> <p><b>a) <i>PMDFC</i></b></p> <p>PMDFC has the project monitoring and supervisory role and the company has enough experts and staff to complete this assignment. PMDFC has already deployed under mentioned staff for these projects:</p> <ul style="list-style-type: none"> <li>● Civil Engineers</li> <li>● Accounts, administration and audit personnel</li> <li>● Urban planners</li> <li>● GIS experts</li> <li>● Support staff like computer operators, vehicle drivers, office boys and guards.</li> <li>● Procurement experts</li> <li>● Communication experts</li> <li>● Environmental and social experts</li> <li>● Contract management experts</li> </ul> <p><b>b) <i>Consultants</i></b></p> <p>PMDFC has employed (M/s MM PAKISTAN) as consultants for detailed design and resident supervision of the projects who will deploy their staff for execution of the project.</p> <p><b>c) <i>Municipality</i></b></p> <p>Municipal committee has regular staff like engineers, sub engineers and other administrative &amp; accounts keeping staff which will be</p>												



	<p>responsible for execution of the project and contract management. No additional staff will be needed for execution of this project</p> <p><b>d) Contractor</b></p> <p>The contractor responsible for execution of the sub project will employ skilled and un-skilled labor on this work.</p> <p><b>Indirect Employment</b></p> <p>Indirect employment for production of material such as cement, steel, stone metal, bitumen, bricks etc. will be generated.</p>
iii.Impacts of delays on project cost and viability	<p>The impact of delay in project implementation will;</p> <ul style="list-style-type: none"> <li>● Result in increased project cost due to escalation in cost of material and labor.</li> <li>● Delay the benefits to the target group</li> <li>● Result in further deterioration of the infrastructure and the service delivery level.</li> </ul>

## **11.2 ENVIROMENTAL IMPACT ANALYSIS:**

Attached as Annexure-E

## **11.3 ECONOMIC ANALYSIS:**

Attached as Annexure-C

## **11.4 FINANCIAL ANALYSIS:**

N/A

## **12. IMPLEMENTATION SCHEDULE**

### **12.1 IMPLEMENTATION SCHEDULE/GANTT CHART:**

As under

12-Implementation Schedule		
a) Indicate starting and completion date of the project		The project is anticipated to commence by October 2023 and to be completed by February 2025 with project implementation period of 17 months.
b) Item wise/year wise schedule in line chart		See Gant Chart attached as <b>Annex-D</b>

## **12.2 RESULT BASED MONITORING (RBM) INDICATORS:**

N/A

## **12.3 IMPLEMENTATION PLAN:**

Attached as Annexure-D and Drawings as Annexure-G

## **12.4 M&E PLAN:**

N/A

## **12.5 RISK MITIGATION PLAN:**

N/A

## **12.6 PROCUREMENT PLAN:**

N/A

## **13. MANAGEMENT STRUCTURE AND MANPOWER REQUIREMENTS**

As under

13- Management Structure and manpower requirements											
i. Administrative arrangements for the implementation of the project	<b>i. Planning &amp; design of the project</b> The project has been designed by the consultants employed by PMDFC and will also carry out the resident supervision of the project.										
	<b>ii. Preparation of cost estimation</b> The cost estimates have been prepared by the Design Consultants by actual measurements at site. The execution of the items of works included in these estimates /PC-I will be certified by these consultants.										
	<b>iii. Execution of the project</b> <ul style="list-style-type: none"><li>The project will be executed by MC Gojra and supervised by the Consultants appointed by PMDFC in resident supervision mode. The technical staff &amp; experts in PMDFC will oversee, co-ordinate and collaborate in the project planning, design and implementation through their experts in head office located in Lahore and regional offices. The reporting of progress to LG &amp; CDD &amp; World bank and troubleshooting will also be responsibility of PMDFC.</li><li>MO (I&amp;S) of the Unit has been designated as Project Manager /Engineer in Charge of the project. The supervision of the works will also be carried out by these municipal officers along with their support engineering staff. All supervisory staff is available with MC Gojra.</li><li>The Procurement Committee of MC Gojra will do the procurement of works and goods as per PPRA Rules.</li></ul>										
	<b>a) PMDFC experts and staff</b> For rendering assistance in implementation of infrastructure projects in 16 MCs, PMDFC has the experts and staff in the required fields. In order to facilitate the Program Units, three regional offices have been established by PMDFC at Gujranwala, Faisalabad and Multan/Daska.										
ii- The manpower requirements by skills during execution and operation of the project and; The job description, qualification, experience, age and salary of each post	<b>b) Resident Supervision Consultants</b> The project will be supervised by consultants. The tentative staff to be employed/deployed by the consultants for the certification of quantities of works and resident supervision of the project is given below.										
	<table><tr><th>Sr. No.</th><th>Personnel</th><th>No.</th><th>Qualification</th></tr><tr><td>1</td><td>Chief Resident Engineer/Team Leader</td><td>01</td><td>BSc;/BE in Civil engineering with minimum 20 years’ professional experience or MSC; Civil Engineering/Public Health Engineering/Environmental Engineering with Bachelor in Civil Engineering and minimum 15 years, experience, with 5 years on similar assignments in both cases</td></tr></table>	Sr. No.	Personnel	No.	Qualification	1	Chief Resident Engineer/Team Leader	01	BSc;/BE in Civil engineering with minimum 20 years’ professional experience or MSC; Civil Engineering/Public Health Engineering/Environmental Engineering with Bachelor in Civil Engineering and minimum 15 years, experience, with 5 years on similar assignments in both cases		
Sr. No.	Personnel	No.	Qualification								
1	Chief Resident Engineer/Team Leader	01	BSc;/BE in Civil engineering with minimum 20 years’ professional experience or MSC; Civil Engineering/Public Health Engineering/Environmental Engineering with Bachelor in Civil Engineering and minimum 15 years, experience, with 5 years on similar assignments in both cases								

		2	Senior Engineer	01	BSc/BE Civil engineering with minimum 08 years' relevant design experience or MSc engineering, with 5 years on similar assignments in both cases
		3	Resident Engineer	01	BSc/BE Civil engineering with minimum 10 years' experience in site supervision and execution for projects of similar nature.
		4	Assistant Resident Engineer	01	Bachelor Degree in Civil engineering with minimum 8 years' experience in site supervision and execution for projects of similar nature
		5	Site Inspectors	01	DAE in Civil with minimum 10 years' experience in site supervision for projects of similar nature
		6	Quantity Surveyor	01	DAE in Civil Technology with minimum 10 years' experience in estimation & costing of projects of similar nature. The person having public sector projects will be preferred.
		7	AutoCAD Operator	01	DAE in Civil Technology with minimum 5 years' experience in preparation of drawings for projects of similar nature. (Situated at Lahore office)
		8	Environment Specialist	01	16 years of education in Environmental Sciences/Engineering with minimum 05 years of experience in environmental management and site-specific supervision of ESMMPs and EHS SOPs
		9	Social Safeguards /Resettlement Specialist	01	16 years of education in Sociology/Social Work or Anthropology with minimum 05 years of experience in social management and handling site specific social management plans and grievance management
		<p><b>c) Contractor's Technical Staff, Skilled &amp; Non-Skilled Labor</b></p> <p>The contractors will employ the supervisory technical staff and skilled &amp; non skilled labor for execution of works. The works will be supervised by experienced Engineers and sub engineers and the number of slots for engineers and skilled and non-skilled will depend upon the type and quantity of work and its period of completion.</p> <p><b>d) Repair &amp; Maintenance of the Project</b></p> <p>MC has its own regular staff which has been deployed for Repair and maintenance of the municipal services infrastructure. However, it has been observed that the existing staff is not adequate to repair and maintain the</p>			

	<p>services in a manner which can give good service delivery. Hence it is proposed to;</p> <ul style="list-style-type: none"> <li>• Fill up the presently vacant slots</li> <li>• Recruit additional staff as per need of the infrastructure after obtaining the sanctions from the competent authorities.</li> </ul>
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## **14. ADDITIONAL PROJECTS / DECISIONS REQUIRED**

As under



14-Additional projects /decisions required to optimize the investment being undertaken	<p><b>Shortage &amp; frequent transfers of Provincially appointed staff</b></p> <p>MC is facing shortage in provincially appointed and locally appointed cadres. This will seriously affect the pace of progress of the program and the implementation of the infrastructure projects may be delayed. Provincial Government should fill-up the vacant staff immediately for optimizing the investments and capacity building in MC.</p>
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## 15. CERTIFICATE

**Focal Person Name:** Syed Zahid Aziz

**Designation:** Managing Director

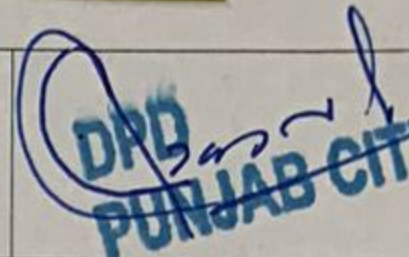

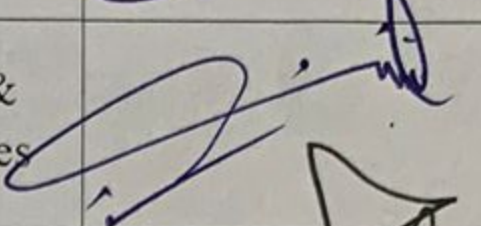
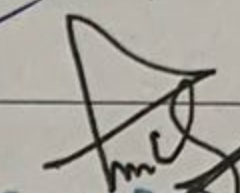
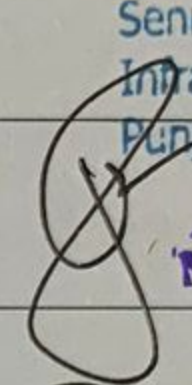
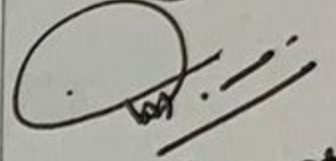
**Email:** info@pmdfc.org.pk

**Tel. No.:** 04299204386

**Fax No:** 04299204390

**Address:** 184 Scotch Corner Upper Mall Scheme Lahore

15-Certificate	Certified that the project proposal has been prepared on the basis of guidelines provided by the Planning Commission for the preparation of PC-I for social sectors projects.
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Prepared by	MUHAMMAD IFTIKHAR RASOOL DPD. PCP	Stamp & Signatures	 DPD PUNJAB CITIES PROGRAM
Checked by	Municipal Officer (I&S) Municipal Committee Gojra	Stamp & Signatures	 Municipal Officer(I) Municipal Committee Gojra
	Chief Officer Municipal Committee Gojra	Stamp & Signatures	
Vetted by	Senior Program Officer (ID) PMDFC	Stamp & Signatures	 26/6/23 Senior Program Officer Infrastructure Development Punjab Cities Program
Submitted by	Administrator Municipal Committee Gojra	Stamp & Signatures	 Administrator Municipal Committee Gojra
Forwarded by	Secretary LG & CD Department	Stamp & Signature	 Secretary LG&CD Department Government of the Punjab

## 18. RELATION WITH OTHER PROJECTS

Scheme ID	Scheme Name
01982210760	Improvement of Sewerage System in Jhang City and Construction of Waste Water Treatment Plant (WWTP)

## 20. MARGINALISATION OF PC-1

SR.NO.	CRITERIA	YES/NO	ACTION	COMMENTS
1	Do the description / Objectives of the PC-I specify link / alignment with provincial strategies and sectoral policies?	NO		
1	Was gender disaggregated data used to determine rationale / need of the project for select beneficiaries?	NO		
2	Was gender disaggregated data used to identify potential impact of the project on select beneficiaries?	NO		
1	Do project objectives/justification include focus on marginalised groups (women, PWDs, minorities, transgender, poor etc.)?	NO		
1a	Have marginalised groups (Women, PWDs, Minorities, Transgender Persons, Poor etc.) been included in project objectives / justification and / or as beneficiaries of the project?	NO		
1b	If yes, does the PC-1 specify a specific quota/percentage for the marginalised (women, PEDs, etc.)?	NO		
2	Does the PC-1 include specific provisions for capacity building / training of marginalised group (if applicable)?	NO		
1a	Does the PC-I include a Results Based Monitoring Framework (RBMF)/Logical Framework?	NO		

1b	Does the Framework include measurable targets / indicators relating to impact on marginalised groups?	NO		
2	Were SDG indicators used for determining targets included in the PC-I?	NO		
3	Was gender disaggregated data used to establish baseline and develop quantifiable targets/key indicators?	NO		
1	Was female representation ensured in planning and ADP formulation?	NO		
2	Did the Stakeholder consultation(s) held during ADP Formulation and / or PC-I development include experts and representatives of marginalised groups and CSOs?	NO		
1	Does the project provide a role to communities in project monitoring and/or implementation (if relevant)?	NO		
2a	Does the project include formation of a Steering Committee and/or Project Implementation Committees?	NO		
2b	Is there a provision to ensure representation of women in these committees?	NO		
1	What percentage of the project / PC-I budget has been allocated for the uplift of women / girls?	NO		

## **ANNEXURE-B**

Cost estimate

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE  
WATER TREATMENT PLANT (WWTP) GOJRA CITY**

<b>Ser #</b>	<b>Description</b>	<b>Cost (RS.) In Millions</b>
1	Package-1 Sewerage system	374.24
2	Package-2 Disposal station & Forcemain	449.30
3	Package-3 Providing and Fixing of RPC manhole Cover	10.23
4	Package-4 Construction of Wastewater Treatment Plant (WWTP)	456.90
5	Package-5 Supply of Liquid Waste Machinery	5.62
6	E & S Cost	7.50
	<b>Total Cost (Rs.)</b>	<b>1,303.79</b>
	Add 2% contingencies	26.08
	Add 5% PST	65.19
	Add 5% escalation	65.19
	<b>Grand Total Cost (Rs. In millions)</b>	<b>1,460.25</b>



**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF  
WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

**GENERAL ABSTRACT OF COST**

<b>Ser #</b>	<b>Description</b>	<b>Cost (RS.) In Millions</b>
1	Providing and Laying Trunk Sewer	277.62
2	Restoration of Roads (Trunk Sewer Rute)	42.70
3	Providing and Laying Branch Sewer	43.41
4	Restoration of Roads (Branch Sewer Rute)	10.50
5	Supply of Liquid Waste Machinery (Desilting Machine	5.62
6	Providing & Fixing Of Reinforced Plastic Composite (Rpc) Manhole Covers 24" I/D With Rpc Frame	10.23
7	Construction of Disposal Station	159.55
8	Forcemain	289.75
9	Construction of WWTP	456.90
10	Enviromental & Social Cost	7.50
	<b>Total Cost (Rs.)</b>	<b>1,303.79</b>
	Add 2% contingencies	26.08
	Add 5% PST	65.19
	Add 5% escalation	65.19
	<b>Grand Total Cost (Rs. In millions)</b>	<b>1,460.25</b>

**DETAILED QUANTITY SEWER  
FOR THE SCHEME  
PROVIDING AND LAYING TRUNK SEWER IN GOJRA CITY**

Part-A

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
1	Dismantling and removing road pavement etc, including screening and stacking of by products upto chain (30m) lead.					
	21" dia		707.00	8.00	1.50	8,484.00
	24" dia		877.00	8.00	1.50	10,524.00
	30" dia		736.00	11.25	1.50	12,420.00
	36" dia		1,095.00	11.25	1.00	12,318.75
	42" dia		2,772.00	12.50	1.00	34,650.00
					<b>Total:-</b>	<b>78,396.75</b>
2	Dismantling of tuff tile		1,100.00	11.25		12,375.00
3	Dismantling of sub base		1,100.00	11.25	0.50	6,187.50
4	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock.					
	<b>0-7' depth</b>					
	21" dia		1,010.00	8.00	7.00	56,560.00
	24" dia		4,387.00	8.00	7.00	245,672.00
	27" dia		2,408.00	10.00	7.00	168,560.00
	30" dia		2,105.00	11.25	7.00	165,768.75
	36" dia		3,129.00	11.25	7.00	246,408.75
	42" dia		6,930.00	12.50	7.00	606,375.00
					<b>Total:-</b>	<b>1,489,344.50</b>
	<b>7-15' depth</b>					
	21" dia		1,010.00	6.00	6.75	40,905.00
	24" dia		4,387.00	6.00	8.00	210,576.00
	27" dia		2,408.00	8.00	7.25	139,664.00
	30" dia		2,105.00	9.25	8.00	155,770.00
	36" dia		3,129.00	9.25	8.00	231,546.00
	42" dia		4,462.00	8.00	5.00	178,480.00
					<b>Total:-</b>	<b>956,941.00</b>
	<b>Above 15' depth</b>					
	36" dia		1,296.00	6.75	3.25	28,431.00
					<b>Total:-</b>	<b>28,431.00</b>
					<b>G.Total:-</b>	<b>2,474,716.50</b>
5	Earthwork excavation of trenches in open cutting for sewers and manhole chambers, etc. below sub-soil water level to correct section and dimensions according to templates and levels, including shoring, timbering and shuttering of M.S. sheets on both sides of the trenches					
	i) 0 ft. to 4.0 ft. (0 to 1.20 m) depth below SSWL.		2,468.00	6.75	4.00	66,636.00
	ii) 4.01 ft. to 8.0 ft. (1.22 to 2.4 m) depth below SSWL		2,468.00	6.75	3.00	49,977.00
6	Lowering of sub-soil water table, by installation of tubewells along sewer line and pumping out water, for excavation in open cutting below sub-soil water level, concreting, curing, laying and jointing pipes, filling haunches, etc. till the completion of sewer line, including disposal of pumped out water:-					
	6) 0-6 ft. (0 to 1830 mm) below SSWL		2,468.00			2,468.00
7	Extra for slush or Daldal		1,100.00	5.50	3.75	22,687.50
8	Bailing out water:- b) by pump 1x8x35x60x60					3,744,000.00

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
9	Supplying, laying, granular material crushed stone) 1/2" to 1" gauge under pipe line and up to half diameter of pipe.					
	21" dia		1,010.00	3.54	1.54	5,506.12
	24" dia		4,387.00	3.83	1.75	29,403.87
	27" dia		2,408.00	4.12	1.93	19,147.45
	33" dia		2,105.00	4.77	2.30	23,093.96
	36" dia		3,129.00	4.92	2.58	39,718.27
	42" dia		6,930.00	5.92	3.00	123,076.80
					<b>Total</b>	<b>239,946.47</b>
	Deduction of dia of pipe					
	21" dia		1,010.00	0.5*3.14*2.21*2.21*0.25		1936.18
	24" dia		4,387.00	0.5*3.14*2.50*2.50*0.25		10761.86
	27" dia		2,408.00	0.5*3.14*2.875*2.875*0.25		7812.17
	33" dia		2,105.00	0.5*3.14*3.23*3.23*0.25		8619.79
	36" dia		3,129.00	0.5*3.14*3.67*3.67*0.25		16541.59
	42" dia		6,930.00	0.5*3.14*4.25*4.25*0.25		49130.45
					<b>Total Net</b>	<b>145144.42</b>
10	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-II, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.					
	21" dia		1,010.00			1,010.00
	24" dia		4,387.00			4,387.00
	27" dia		2,408.00			2,408.00
11	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-III, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.					
	30" dia		2,105.00			2,105.00
	36" dia		3,129.00			3,129.00
	42" dia		6,930.00			6,930.00
12	Providing of R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-III, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.					
	36" dia		990.00			990.00
	42" dia		215.00			215.00
13	Laying of pipe by jacking method					
	36" dia		990.00			990.00
	42" dia		215.00			215.00
14	Transportation of earth all types when the total distance including the lead covered in the item of work, is more than 1000 ft. (300 m) lead upto 3 km <b>0-7' depth</b>					
	21" dia		707.00	8.00	4.00	22,624.00
	24" dia		877.00	8.00	4.00	28,064.00
	30" dia		736.00	11.25	5.00	41,400.00
	36" dia		1,095.00	11.25	6.00	73,912.50
	42" dia		2,772.00	12.50	6.00	207,900.00
						<b>373,900.50</b>
15	(i) Rehandling of earth work. (a) Lead upto a single throw of Kassi, phaorah or shovel. (ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.					
		1,979,773.20		-	-	1,979,773.20
		1,979,773.20		-	-	1,979,773.20
16	Left in place shuttering used for laying of pipe by jacking method					1242.00
17	Providing and applying epoxy lining in the main sewer lines (24" and above dia)					
	24" dia		4,387.00		6.28	27,550.36
	27" dia		2,408.00		7.07	17,024.56
	30" dia		2,105.00		8.64	18,187.20
	36" dia		3,129.00		9.42	29,475.18
	42" dia		6,930.00		10.99	76,160.70
						<b>168,398.00</b>

18	Providing and Installing C.I ventilating shaft painted with bituminous paint with foundation bolts as per PHED standard drawing STD/PD No. 4 of 1977, complete in all respect (except concrete foundation block) 6" (150 mm) i/d shaft, 24 ft. (7.30 metre) long 9" (225 mm) i/d shaft, 24 ft. (7.30 metre) long					1500.00 3000.00
19	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1. Item.No. 1) Ratio (1:3.6) Ratio (1:2.4)	1 1	8871.34 5055.11	0.92 0.88		8197.12 4448.50 <b>12645.61</b>
20	Restoration of tuff tile Re-Laying of Sub Base Course by using old material (received through dismantalling of road crust, compacted up to 100% modified AASHO dry density complete in all respect. (Labour Rate only)		1,100.00	11.25	0.45	5,568.75
21	Providing and laying sand under and around the sewer pipe, including leveling, manual compaction, complete in all respect.		1,100.00	11.25	0.17	2,103.75
22	Re-laying Tuff pavers, having 7000 PSI, crushing strength of approved manufacturer, over 2" to 3" sand cushion i/c grouting with sand in joints i/c finishing to require slope . complete in all respect (10-41)		1,100.00	11.25		12,375.00

**DETAILED QUANTITY MANHOLE  
FOR THE SCHEME  
PROVIDING AND LAYING TRUNK SEWER IN GOJRA CITY**

## Part-B Manholes

S.No.	Name of Work	Nos.	Qty. of each Chamber	T.Quantity
1	Earth work excavation in open cutting for sewers and manhole as shown in drawings including shuttering and timbering, dressing to correct section and <b>0-7'ft. Depth.</b> 21" dia 24" dia 27" dia 30" dia 36" dia 42" dia  <b>7'-15'ft. Depth.</b> 21" dia 24" dia 27" dia 33" dia 36" dia 42" dia  <b>Above 15'ft. Depth.</b> 21" dia 24" dia 27" dia 30" dia 36" dia 42" dia	9 31 16 14 21 32  9 31 16 14 21 32  9 31 16 14 21 32	365 470 470 470 578 578  279 538 538 538 660 660  235 235 289 289 289 289  44.18 67.21 67.21 67.21 82.53 82.53  27.13 38.64 38.64 38.64 46.30 46.30	3,281.56 14,584.43 7,527.45 6,586.52 12,131.41 18,485.96 <b>62,597.32</b>  2,511.00 16,667.92 8,602.80 7,527.45 13,864.47 21,126.81 <b>70,300.44</b>  2,117.09 7,292.21 4,624.00 4,043.80 6,065.70 9,242.98 <b>33,385.79</b>
2	Dry rammed brick or stone ballast 1-1/2" to 2" (40mm to 50mm) gauge. 21" dia 24" dia 27" dia 33" dia 36" dia 42" dia	9 31 16 14 21 32	44.18 67.21 67.21 67.21 82.53 82.53	397.66 2,083.49 1,075.35 940.93 1,733.06 2,640.85 <b>8,871.34</b>
3	Cement concrete plain including, placing compacting finishing and curing complete (including screening and washing of stone aggregate). Ratio 1:3:6 21" dia 24" dia 27" dia 33" dia 36" dia 42" dia  <b>Ratio 1:2:4</b> 21" dia 24" dia 27" dia 33" dia 36" dia 42" dia	9 31 16 14 21 32  9 31 16 14 21 32	44.18 67.21 67.21 67.21 82.53 82.53  27.13 38.64 38.64 38.64 46.30 46.30	397.66 2,083.49 1,075.35 940.93 1,733.06 2,640.85 <b>8,871.34</b>  244.17 1,197.84 618.24 540.96 972.30 1,481.60 <b>5,055.11</b>
4	Pucca brick work other than building upto 10' height. Cement sand mortar Ratio 1:3.	9 31 16 14 21 32	112.28 288.14 288.14 288.14 332.92 332.92	1,010.52 8,932.34 4,610.24 4,033.96 6,991.32 10,653.44 <b>36,231.82</b>
5	Extra for pucca brick work in stening of wells or any other circular masonry.			<b>36,231.82</b>
6	Extra for making and finishing benching floor work in manhole chamber 1/8" (3mm) thick cement finish. 21" dia 24" dia 27" dia 33" dia 36" dia 42" dia	9 31 16 14 21 32	12.56 15.71 15.71 15.71 28.27 28.27	113.04 487.01 251.36 219.94 593.67 904.64 <b>2,569.66</b>

S.No.	Name of Work	Nos.	Qty. of each Chamber	T.Quantity
7	C.I. step @ wt. 3kg each in manhole chambers I/c carriage setting the same in work to correct lines and levels.			
	21" dia	9	4	36.00
	24" dia	31	6	186.00
	27" dia	16	6	96.00
	33" dia	14	6	84.00
	36" dia	21	10	210.00
	42" dia	32	10	320.00
			<b>Total</b>	<b>932.00</b>
8	Cement plaster 1:3 up to 20' height 1/2" thick.			
	21" dia	9	133.65	1,202.85
	24" dia	31	645.84	20,021.04
	27" dia	16	645.84	10,333.44
	33" dia	14	645.84	9,041.76
	36" dia	21	749.91	15,748.11
	42" dia	32	749.91	23,997.12
			<b>Total</b>	<b>80,344.32</b>
9	RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).	123	1.00	123

**DETAILED ESTIMATE**  
**FOR THE SCHEME**  
**PROVIDING AND LAYING TRUNK SEWER IN GOJRA CITY**

Part-A (Govt. Notified Rates) July 2023 to December 2023 (TTS)

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-4/46	Dismantling and removing road pavement etc, including screening and stacking of by products upto chain (30m) lead.	100 Cft.	78,396.75	3468.00	2,718,799.29
2	N.S	Dismantling of tuff tile	100 Cft.	12,375.00	942.50	116,634.38
3	C-4/46	Dismantling of sub base	100 Cft.	6,187.50	3,468.00	214,582.50
4	C-3/42	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock.				
		(i) 0 ft to 7 ft. Depth	1000 Cft.	1,551,941.82	15688.05	24,346,940.88
		(ii) 7 ft to 15 ft. Depth	1000 Cft.	1,027,241.44	22379.80	22,989,457.88
		(iii) Above 15 ft. Depth	1000 Cft.	61,816.79	23589.85	1,458,248.91
5	C-3/43	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock.				
		i) 0 ft. to 4.0 ft. (0 to 1.20 m) depth below SSWL.	1000 Cft.	66,636.00	22,338.80	1,488,568.28
		ii) 4.01 ft. to 8.0 ft. (1.22 to 2.4 m) depth below SSWL	1000 Cft.	49,977.00	28,683.10	1,433,495.29
6	C-21/6	Lowering of sub-soil water table, by installation of tubewells along sewer line and pumping out water, for excavation in open cutting below sub-soil water level, concreting, curing, laying and jointing pipes, filling haunches, etc. till the completion of sewer line, including disposal of pumped out water:-				
		6) 0-6 ft. (0 to 1830 mm) below SSWL	1 Rft	2,468.00	5,123.35	12,644,427.80
7	C-3/27	Extra for slush or Daldal	1000 Cft	22,687.50	10,391.05	235,746.95
8	C-26-35	Bailing out water:- b) by pump	1000 Cft	3,744,000.00	1,037.95	3,886,084.80
9	C-21/23	Providing and laying crushed stone aggregate of 1/4" to 1" gauge under and around the sewer pipe, including leveling, manual compaction, complete in all respects	100 Cft	239,946.47	11437.20	27443157.18
10	C-21/3	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-II, Wall-B, including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.				
		21" dia	Rft	1,010.00	1,761.65	1,779,266.50
		24" dia	Rft	4,387.00	2,034.05	8,923,377.35
		27" dia	Rft	2,408.00	3,041.10	7,322,968.80
11	C-21/4	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-III, Wall-B, including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.				
		33" dia	Rft	2,105.00	5,018.20	10,563,311.00
		36" dia	Rft	3,129.00	5,666.30	17,729,852.70
		42" dia	Rft	6,930.00	6,601.05	45,745,276.50
12	C-21/4	Providing of R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-III, Wall-B, including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.				
		36" dia	Rft	990.00	5,666.30	5,609,637.00
		42" dia	Rft	215.00	6,601.05	1,419,225.75
13		Laying of pipe by jacking method				
		36" dia	Rft	990.00	3,006.00	2,975,940.00
		42" dia	Rft	215.00	3,454.00	742,610.00
14	C-3/17	Transportation of earth all types when the total distance including the lead covered in the item of work, is more than 1000 ft. (300 m) lead upto 3 km	1000 Cft.	373,900.50	6649.35	2,486,195.29

15	C-3/13	(i) Rehandling of earth work. (a) Lead upto a single throw of Kassi, phaorah or shovel.	1000 Cft.	1,979,773.20	3,247.20	6,428,719.54
16	C-3/24a,c	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.	1000 Cft.	1,979,773.20	1,541.85	3,052,513.31
17	N.S	Providing and applying epoxy lining in the main sewer lines (24" and above dia) complete in all respects	1 Sft	168,398.00	130.00	21,891,740.00



S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
18	C-21/9	Extra for making and finishing benching floor work in manhole chamber with 1/8" thick cement finish.	100 Sft.	2,569.66	3,541.50	91,004.51
19	C-6/5	Cement concrete plain including, placing, compacting, finishing, and curing complete (including screening and washing of stone aggregate. (I) P.C.C. 1:3:6 (II) P.C.C. 1:2:4	100 Cft. 100 Cft.	8,871.34 5,055.11	38,182.80 43,837.20	3,387,325.56 2,216,018.68
20	C-7/7	Pacca brick work other than building upto 10 ft height in 1:3 cement sand mortar.	100 Cft.	36,231.82	35,504.50	12,863,926.53
21	C-7/10	Extra for pacca brick work in steining of wells or any other circular masonry.	100 Cft.	36,231.82	3145.20	1,139,563.20
22	C-11/8	Cement plaster 1/2" thick (1:3) cement sand mortar upto 20' height.	100 Sft.	80,344.32	4,132.80	3,320,470.06
23	C-21/13	Providing and fixing 1 1/4"x1 1/4"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	- Each	932.00	700.50	652,866.00
24	C-6/2	Dry rammed bricks or stone ballast 1.5" to 2" gauge.	100 Cft.	8,871.34	11,008.80	976,627.95
25	N.S	RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).	- P.set	123	11592.00	1,425,816.00
26	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	12645.61	6704.50	847,825.18
27	C-21/21	Providing and Installing C.I ventilating shaft painted with bituminous paint with foundation bolts as per PHED standard drawing STD/PD No. 4 of 1977, complete in all respect (except concrete foundation block):-6" (150 mm) i/d shaft iv) 36 ft. (11 metre) long 6" (150 mm) i/d shaft, 24 ft. (7.30 metre) long 9" (225 mm) i/d shaft, 24 ft. (7.30 metre) long	100 Kg. 100 Kg.	1,500.00 3,000.00	37,297.25 37,077.80	559,458.75 1,112,334.00
28	C-18/3a-II	<b>Restoration of tuff tile</b> Re-Laying of Sub Base Course by using old material (received through dismantling of road crust, compacted up to 100% modified AASHO dry density complete in all respect. (Labour Rate only)18/3a-II	100 Cft.	5,568.75	9,695.25	539,904.23
29	C-10/3	Supplying and filling sand under floor; or plugging in wells.	100 Cft.	2,103.75	3,061.20	64,400.00
30	C-10/41	Re-laying Tuff pavers, having 7000 PSI, crushing strength of approved manufacturer, over 2" to 3" sand cushion i/c grouting with sand in joints i/c finishing to require slope . complete in all respect. (50% Grey / 50% Coloured a) 50-mm thick	P Sft	12,375.00	166.65	2,062,293.75
				<b>Total:- (A)</b>	<b>Rs.</b>	<b>266,906,612.25</b>

**T.S ESTIMATE**  
**FOR THE SCHEME**  
**PROVIDING AND LAYING TRUNK SEWER IN GOJRA CITY**

**Part-A (Govt. Notified Rates) January 2023 to July 2023**

S #	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	R.A	Making connections of sewer line with manhole of existing sewer line complete in all respect.				
		(i) 9" to 18" dia with 27" dia	- Job	4.00	14,400.00	57,600.00
		(i) 12" to 18" dia with 36" dia	- Job	8.00	16,900.00	135,200.00
2	R.A	Left in place shuttering used for laying of pipe by jacking method		1,242.00	1,950.00	2,421,900.00
3	N.S	Provision for Shifting of existing services.	L.S	1.00	3,100,000.00	3,100,000.00
4	N.S	Provision for Suigas Transmission cross	L.S	1.00	5,000,000.00	5,000,000.00
<b>Total:- (B)</b>					<b>Rs.</b>	<b>10,714,700.00</b>
<b>Total:- (A+B)</b>					<b>Rs.</b>	<b>277,621,312.25</b>
<b>Say:-</b>					<b>Rs.</b>	<b>277.62</b>
						<b>Million</b>

**RATE ANALYSIS FOR 36" DIA SEWER PIPE BY JACKING METHOD.****Unit = (100 Rft. For 36" Dia)**

Ser. No.	Description	Unit	Qty	Rate	Amount (Rs.)
1	Lowering of 36" dia pipe by crane for jacking to save the built up structure built up structure Length (100ft 12.50 pipe, 8' long)				
a).	<b><u>Hire Charges of Crane Capacity 20 Ton.</u></b>				
Input Rates	Hire charges of crane @ Rs. 5607/ Hour (for 4-Days) 8 working hour a day =32 hours (According to RCC Pipe weight Capacity).	P.Hour	32.00	5270	168,640
b).	<b><u>Labour Charges</u></b>				
Input Rates	Skilled labour 3 person per day (for 4-Days)				
Input Rates	12-Person	P.No	12.00	1600	19,200
Input Rates	Semi-skilled labour 3 person per day (for 4-Days)				
Input Rates	12-Person	P.No	12.00	1050	12,600
Input Rates	Un-skilled labour 4 person per day (for 4-Days)				
Input Rates	16-Person	P.No	16.00	1230	19,680
2	Hire charges of heavy R.S Joist, wooden planks, struts, 10 KVA generator i/c cost of POL, wages for generator operator i/c freight charges of all T&P from market to site of work and back from site of work to market. For 4 days	P.Day	4.00	2800	11,200
3	Jacking apparatus required i/c cost of hydraulic oil and freight charges of apparatus from market to site of work and from site of work to market/store i/c wages of operator. 2 sets @ Rs.2400/set	P.Day	4.00	4800	19,200
				<b>Total : -</b>	<b>250,520.00</b>
				Add 10% Over-head Charges : -	25,052.00
				Add 10% Contractor's Profit : -	25,052.00
				<b>Grand Total : -</b>	<b>300,624.00</b>
		<b>Rate Per Rft : -</b>	<b>300,624.00 /100</b>		<b>3,006.24</b>
				<b>Say Rs. : -</b>	<b>3,006</b>

**RATE ANALYSIS FOR 42" DIA SEWER PIPE BY JACKING METHOD****Unit = (100 Rft. For 42" Dia)**

Ser. No.	Description	Unit	Qty	Rate	Amount (Rs.)
1	Lowering of 42" dia pipe by crane for jacking to save the built up structure built up structure Length (100ft 12.50 pipe, 8' long)				
a).	<b><u>Hire Charges of Crane Capacity 20 Ton.</u></b>				
Input Rates	Hire charges of crane @ Rs. 5607/ Hour (for 4-Days) 8 working hour a day =32 hours (According to RCC Pipe weight Capacity).	P.Hour	32.00	5270	168,640
b).	<b><u>Labour Charges</u></b>				
Input Rates	Skilled labour 5 person per day (for 4-Days) 20-Person	P.No	20.00	1600	32,000
Input Rates	Semi-skilled labour 6 person per day (for 4-Days) 24-Person	P.No	24.00	1050	25,200
Input Rates	Un-skilled labour 6 person per day (for 4-Days) 24-Person	P.No	24.00	1050	25,200
2	Hire charges of heavy R.S Joist, wooden planks, struts, 10 KVA generator i/c cost of POL, wages for generator operator i/c freight charges of all T&P from market to site of work and back from site of work to market. For 4 days	P.Day	4.00	3500	14,000
3	Jacking apparatus required i/c cost of hydraulic oil and freight charges of apparatus from market to site of work and from site of work to market/store i/c wages of operator. 2 sets @ Rs.2850/set	P.Day	4.00	5700	22,800
				<b>Total : -</b>	<b>287,840.00</b>
				Add 10% Over-head Charges : -	28,784.00
				Add 10% Contractor's Profit : -	28,784.00
				<b>Grand Total : -</b>	<b>345,408.00</b>
		<b>Rate Per Rft : -</b>	<b>345,408.00 /100</b>		<b>3,454.08</b>
				<b>Say Rs. : -</b>	<b>3,454</b>

**Restoration of Roads (Trunk Sewer Rute)**

S.No.	Detail of Item/Work	Measurements			Quantity
		Nos	L	B	H
1	Supplying and filling sand under floor; or plugging in wells.				
	21" dia		707.00	8.00	4.00
	24" dia		877.00	8.00	4.00
	33" dia		736.00	11.25	5.00
	36" dia		1,095.00	11.25	6.00
	42" dia		2,772.00	12.50	6.00
				<b>Total:-</b>	<b>373,900.50</b>
2	Re-Laying of Sub Base Course by using old material (received through dismantalling of road crust, compacted up to 100% modified AASHO dry density complete in all respect. (Labour Rate only)18/3a-II				
	21" dia		707.00	8.00	1.00
	24" dia		877.00	8.00	1.00
	30" dia		736.00	11.25	1.00
	36" dia		1,095.00	11.25	1.00
	42" dia		2,772.00	12.50	1.00
				<b>Total:-</b>	<b>67,920.75</b>
3	Providing and laying of road edging of 3" wide and 9" deep brick on end complete in all respect. 18/5				
	21" dia	2.00	707.00		
	24" dia	2.00	877.00		
	30" dia	2.00	736.00		
	36" dia	2.00	1,095.00		
	42" dia	2.00	2,772.00		
				<b>Total:-</b>	<b>12,374.00</b>
4	Providing & Laying (Water Bound macadam) Base Course of crushed stone aggregate form Kirana quarry of required thickness of approved quality and grade, and supply and spreading of stone screening , including placing, mixing, spreading and compaction of base course material to required depth, camber and grade to achieve 100% maximum modified AASHO dry density, including carriage of all materials to site of work, complete in all respect. 18/4a				
	21" dia		707.00	8.00	0.67
	24" dia		877.00	8.00	0.67
	30" dia		736.00	11.25	0.67
	36" dia		1,095.00	11.25	0.67
	42" dia		2,772.00	12.50	0.67
				<b>Total:-</b>	<b>45,506.90</b>
5	Providing and Laying bitumenious priming coat, using 10 Lbs kerosin oil and 10 lbs binder per 100 Sft or 0.5 Kg Kerosene and 0.5 Kg binder per square metre.				
	21" dia		707.00	8.00	
	24" dia		877.00	8.00	
	30" dia		736.00	11.25	
	36" dia		1,095.00	11.25	
	42" dia		2,772.00	12.50	
				<b>Total:-</b>	<b>67,920.75</b>
6	Providing ana laying Plant Premixed bitumenious carpt i/c compaction and finishing to required grade camber and density with 4.5 % bitumen 2" thick. (AWC)				
	21" dia		707.00	8.00	
	24" dia		877.00	8.00	
	30" dia		736.00	11.25	
	36" dia		1,095.00	11.25	
	42" dia		2,772.00	12.50	
				<b>Total:-</b>	<b>67,920.75</b>

**Restoration of Roads (Trunk Sewer Rute)**

Sr. No:	Description of items	Quantity	Rate	Unit	Amount
1	Supplying and filling sand under floor; or plugging in wells.. (10/3)	373,900.50	3,061.20	P.% Cft	11,445,842.00
2	Re-Laying of Sub Base Course by using old material (received through dismantalling of road crust, compacted up to 100% modified AASHO dry density complete in all respect. (Labour Rate only)18/3a-II	67920.75	6,815.25	P.% Cft	4,628,969.00
3	Providing and laying of road edging of 3" wide and 9" deep brick on end complete in all respect. 18/5	12374.00	57.40	P.Rft	710,268.00
4	Providing & Laying (Water Bound macadam) Base Course of crushed stone aggregate form Kirana quarry of required thickness of approved quality and grade, and supply and spreading of stone screening , including placing, mixing, spreading and compaction of base course material to required depth, camber and grade to achieve 100% maximum modified AASHO dry density, including carriage of all materials to site of work, complete in all respect. 18/4a	45506.90	28,887.34	P.% Cft	13,145,735.00
5	Providing and Laying bitumenious priming coat, using 10 Lbs kerosin oil and 10 lbs binder per 100 Sft or 0.5 Kg Kerosene and 0.5 Kg binder per square metre.C-18/6	67920.75	2,101.05	P.% Sft	1,427,049.00
6	Providing ana laying Plant Premixed bitumenious carpt i/c compaction and finishing to required grade camber and density with 4.5 % bitumen 2" thick. (AWC)	67920.75	16,700.87	P.% Sft	11,343,356.00
<b>Total</b>					<b>42,701,219.00</b>
					<b>42.70</b>

**DETAILED QUANTITY SEWER  
FOR THE SCHEME  
PROVIDING AND LAYING BRANCH SEWER IN GOJRA CITY**

Part-A

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
1	Dismantling and removing road pavement etc, including screening and stacking of by products upto chain (30m) lead. 15" dia 18" dia		3,725.00 1,575.00	4.00 4.50	1.00 1.00	14,900.00 7,087.50 <b>Total:- 21,987.50</b>
2	Dismantling brick or flagged flooring without concrete foundation 15" dia 18" dia		3,725.00 1,575.00	4.00 4.50	-	14,900.00 7,087.50 <b>Total:- 21,987.50</b>
3	Earth work excavation in open cutting for sewers and manholes as shown in draw - ings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock. <b>0-7' depth</b> 15" dia 18" dia  <b>7-15' depth</b> 15" dia 18" dia		7,450.00 3,150.00  3,725.00 1,575.00	4.00 4.50  2.75 3.00	6.00 6.00  2.25 4.75	178,800.00 85,050.00 <b>Total:- 263,850.00</b>  23,048.44 22,443.75 <b>Total:- 45,492.19</b> <b>309,342.19</b>
4	Supplying, laying, granular material crushed stone) 1/2" to 1" gauge under pipe line and up to half diameter of pipe. 15" dia 18" dia		7,450.00 3,150.00	2.96 3.77	- -	22,046.54 11,866.71 <b>Total 33,913.25</b>
5	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-II, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete. 15" dia 18" dia		7,450.00 3,150.00			7,450.00 3,150.00
6	Transportation of earth all types when the total distance including the lead covered in the item of work, is more than 1000 ft. (300 m) lead upto 3 km <b>0-7' depth</b> 15" dia 18" dia		3,725.00 1,575.00	4.00 4.50	3.00 3.00	44,700.00 21,262.50 <b>Total:- 65,962.50</b>
7	(i) Rehandling of earth work. (a) Lead upto a single throw of Kassi, phaorah or shovel. (ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.		247,473.75  247,473.75	-  -	-  -	247,473.75  247,473.75
8	8 Constructing standard gully grating chamber, 3'x2½' (900x750 mm), with chinaware trap as per PHED Drawing STD/PD No. 3 of 1977, complete in all respects.		50.00			50.00
9	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:3.6) Ratio (1:2.4)	1 1	7069.50 4340.80	0.92 0.88		6532.22 3819.90 <b>10352.12</b>

**DETAILED QUANTITY MANHOLE  
FOR THE SCHEME  
PROVIDING AND LAYING BRANCH SEWER IN GOJRA CITY**

Part-B Manholes

S.No.	Name of Work	Nos.	Qty. of each Chamber	T.Quantity
1	Earth work excavation in open cutting for sewers and manhole as shown in drawings including shuttering and timbering, dressing to correct section and <b>0-7'ft. Depth.</b> 15" dia 18" dia  <b>7'-15'ft. Depth.</b> 15" dia 18" dia	116 44  116 44	287 365 <b>Total:-</b>  227 279 <b>Total:-</b>	33,315.02 16,043.21 <b>49,358.22</b>  26,293.24 12,276.00 <b>38,569.24</b>
2	Dry rammed brick or stone ballast 1-1/2" to 2" (40mm to 50mm) gauge. 15" dia 18" dia	116 44	44.18 44.18 <b>Total:-</b>	5,125.39 1,944.11 <b>7,069.50</b>
3	Cement concrete plain including, placing compacting finishing and curing complete (including screening and washing of stone aggregate). Ratio 1:3:6 15" dia 18" dia  <b>Ratio 1:2:4</b> 15" dia 18" dia	116 44  116 44	44.18 44.18 <b>Total:-</b>  27.13 27.13 <b>Total</b>	5,125.39 1,944.11 <b>7,069.50</b>  3,147.08 1,193.72 <b>4,340.80</b>
4	Pucca brick work other than building upto 10' height Cement sand mortar Ratio 1:3. 15" dia 18" dia	116 44	112.28 112.28 <b>Total</b>	13,024.48 4,940.32 <b>17,964.80</b>
5	Extra for pucca brick work in stening of wells or any other circular masonry.			<b>17,964.80</b>
6	Extra for making and finishing benching floor work in manhole chamber 1/8" (3mm) thick cement finish. 15" dia 18" dia	116 44	12.56 12.56 <b>Total</b>	1,456.96 552.64 <b>2,009.60</b>
7	Providing and fixing 1¼"x1¼"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels. 15" dia 18" dia	116 44	4 4 <b>Total</b>	464.00 176.00 <b>640.00</b>
8	Cement plaster 1:3 up to 20' height 1/2" thick. 15" dia 18" dia	116 44	133.65 133.65 <b>Total</b>	15,503.40 5,880.60 <b>21,384.00</b>
9	RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).	160		160



**DETAILED ESTIMATE  
FOR THE SCHEME  
PROVIDING AND LAYING BRANCH SEWER IN GOJRA CITY**

Part-A (Govt. Notified Rates) January 2023 to July 2023

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-4/46	(i) Dismantling and removing road pavement etc, including screening and stacking of by products upto chain (30m) lead.	100 Cft.	21,987.50	3468.00	762,526.50
2	C-4/29	Dismantling brick or flagged flooring without concrete foundation	100 Sft.	21,987.50	1,104.05	242,752.99
3	C-3/42	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock.				
		(i) 0 ft to 7 ft. Depth	1000 Cft.	313,208.22	15688.05	4,913,626.28
		(ii) 7 ft to 15 ft. Depth	1000 Cft.	84,061.43	22379.80	1,881,277.89
4	C-21/23	Supplying, laying, granular material crushed stone) 1/2" to 1" gauge under pipe line and up to half diameter of pipe.	1000 Cft.	33,913.25	11437.20	387872.58
5	C-21/3	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-II, Wall-B, including carriage of pipe from factory to site of wor, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.				
		15" dia	Rft	7,450.00	1,134.55	8,452,397.50
		18" dia	Rft	3,150.00	1,477.80	4,655,070.00
6	C-3/17	Transportation of earth all types when the total distance including the lead covered in the item of work, is more than 1000 ft. (300 m) lead upto 3 km	1000 Cft.	65,962.50	6649.35	438,607.75
7	C-3/13	(i) Rehandling of earth work. (a) Lead upto a single throw of Kassi, phorah or shovel or shovel.	1000 Cft.	247,473.75	3,247.20	803,596.76
8	C-3/24a,c	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.	1000 Cft.	247,473.75	1,541.85	381,567.40
9	C-21/9	Extra for making and finishing benching floor work in manhole chamber with 1/8" thick cement finish.	100 Sft.	2,009.60	3,541.50	71,169.98
9	C-6/5	Cement concrete plain including, placing, compacting, finishing, and curing complete (including screening and washing of stone aggregate. (I) P.C.C. 1:3:6 (II) P.C.C. 1:2:4	100 Cft. 100 Cft.	7,069.50 4,340.80	38,182.80 43,837.20	2,699,333.05 1,902,885.18
10	C-21/10	Restoration of brick pavement on edge, over laid service line, with 2" (50 mm) sand cushion under soling	100 Sft	21,987.50	6,160.15	1,354,462.98
11	C-7/7	Pacca brick work other than building upto 10 ft height in 1:3 cement sand mortar.	100 Cft.	17,964.80	35,504.50	6,378,312.42
12	C-7/10	Extra for pacca brick work in steining of wells or any other circular masonry.	100 Cft.	17,964.80	3145.20	565,028.89
13	C-11/8	Cement plaster 1/2" thick (1:3) cement sand mortar upto 20' height.	100 Sft.	21,384.00	4,132.80	883,757.95
14	C-6/2	Dry rammed bricks or stone ballast 1.5" to 2" gauge.	100 Cft.	7,069.50	11,008.80	778,267.12
15	N.S	RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).	- P.set	160.00	11592.00	1,854,720.00
16	C-21/13	Providing and fixing 1¼"x1¼"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	- Each	640.00	700.50	448,320.00
17	C-21/8	8 Constructing standard gully grating chamber, 3'x2½' (900x750 mm), with chinaware trap as per PHED Drawing STD/PD No. 3 of 1977, complete in all respects.	1 Each	50.00	18,851.10	942555.00
18	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	10352.12	6704.50	694,058.02

19	N.S	Making connections of sewer line with manhole of existing sewer line complete in all respect.				
		15" to 18" dia	- Job	14.00	5,600.00	78,400.00
		18" to 24" dia	- Job	6.00	7,100.00	42,600.00
20	N.S	Provision for Shifting of existing services.	L.S	1.00	1,800,000.00	1,800,000.00
				Total:- (B)	Rs.	43,413,166.23
				Say:-	Rs.	43.41
						Million

**Restoration of Roads (Branch Sewer Rute)**

S.No.	Detail of Item/Work	No	Measurements			Quantity
			L	B	H	
1	Supplying and filling sand under floor; or plugging in wells.					
	15" dia		3,725.00	4.00	3.00	44,700.00
	18" dia		1,575.00	4.50	3.00	21,262.50
					<b>Total:-</b>	<b>65,962.50</b>
2	Re-Laying of Sub Base Course by using old material (received through dismantalling of road crust, compacted up to 100% modified AASHO dry density complete in all respect. (Labour Rate only)18/3a-II					
	15" dia		3,725.00	4.00	0.375	5,587.50
	18" dia		1,575.00	4.50	0.375	2,657.81
					<b>Total:-</b>	<b>8,245.31</b>
3	Providing and laying of road edging of 3" wide and 9" deep brick on end complete in all respect. 18/5					
	15" dia	2.00	3,725.00			7,450.00
	18" dia	2.00	1,575.00			3,150.00
					<b>Total:-</b>	<b>10,600.00</b>
4	Providing & Laying (Water Bound macadam) Base Course of crushed stone aggregate form Kirana quarry of required thickness of approved quality and grade, and supply and spreading of stone screening , including placing, mixing, spreading and compaction of base course material to required depth, camber and grade to achieve 100% maximum modified AASHO dry density, including carriage of all materials to site of work, complete in all respect.					
	18/4a					
	15" dia		3,725.00	4.00	0.50	7,450.00
	18" dia		1,575.00	4.50	0.50	3,543.75
					<b>Total:-</b>	<b>10,993.75</b>
5	Providing and Laying bitumenious priming coat, using 10 Lbs kerosin oil and 10 lbs binder per 100 Sft or 0.5 Kg Kerosene and 0.5 Kg binder per square metre.					
	15" dia		3,725.00	4.00		14,900.00
	18" dia		1,575.00	4.50		7,087.50
					<b>Total:-</b>	<b>21,987.50</b>
6	Providing ana laying Plant Premixed bitumenious carpt i/c compaction and finishing to required grade camber and density with 4.5 % bitumen 2.00" thick. (AWC)					
	15" dia		3,725.00	4.00		14,900.00
	18" dia		1,575.00	4.50		7,087.50
					<b>Total:-</b>	<b>21,987.50</b>

**Restoration of Roads (Branch Sewer Rute)**

<b>Sr. No:</b>	<b>Description of items</b>	<b>Quantity</b>	<b>Rate</b>	<b>Unit</b>	<b>Amount</b>
1	Supplying and filling sand under floor; or plugging in wells.. (10/3)	65962.50	3,061.20	P.% Cft	2,019,244
2	Re-Laying of Sub Base Course by using old material (received through dismantalling of road crust, compacted up to 100% modified AASHO dry density complete in all respect. (Labour Rate only)18/3a-II	8245.31	6,815.25	P.% Cft	561,939
3	Providing and laying of road edging of 3" wide and 9" deep brick on end complete in all respect. 18/5	10600.00	57.40	P.Rft	608,440
4	Providing & Laying (Water Bound macadam) Base Course of crushed stone aggregate form Kirana quarry of required thickness of approved quality and grade, and supply and spreading of stone screening , including placing, mixing, spreading and compaction of base course material to required depth, camber and grade to achieve 100% maximum modified AASHO dry density, including carriage of all materials to site of work, complete in all respect. 18/4a	10993.75	28,887.34	P.% Cft	3,175,802
5	Providing and Laying bitumenious priming coat, using 10 Lbs kerosin oil and 10 lbs binder per 100 Sft or 0.5 Kg Kerosene and 0.5 Kg binder per square metre.C-18/6	21987.50	2,101.05	P.% Sft	461,968
6	Providing ana laying Plant Premixed bitumenious carpt i/c compaction and finishing to required grade camber and density with 4.5 % bitumen 2" thick. (AWC)	21987.50	16,700.87	P.% Sft	3,672,104

**Total 10,499,497.00****10.50**

**DETAILED ESTIMATE**  
**FOR THE SCHEME**

**SUPPLY OF TRUCK MOUNTED SEWER SUCTION UNIT 5000 LITERS & JETTER MACHINE 4500 LITERS**

Part-A (Govt. Notified Rates) January 2023 to July 2023

S #	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	N.S	Desilting Machine Suzuki Pick up mounted desilting machine, capacity/ Container of the desilting is 0.5 cubic meter, Grab Bucket can lift 5-10 kg silt at one time, can reach to the depth of 18' to 20' all steel part surfaces is free from rust and oil residue. One coat of red oxide and two coat of final paint is done with syenthitic enamel paint. Colour as per costumer choice including all Government Taxes except PRA	No	1	4,525,000.00	4,525,000.00
2	N.S	Providing and fixing of sewer cleaning heavy duty pressure pipe (thermoplastic hydraulic Hose, reinforced with syntheic thread) (Dhaagay wala) 0.75" i/d inner dia complete in all respect. (including all Government Taxes except PRA) with following specifications: i Reinforced with syntheic thread ii Weasther resistant synthetic rubber iii Min. working pressure: 300 bar	Rft	500	2,196.00	1,098,000.00
					<b>Rs.</b>	<b>5,623,000.00</b>
					<b>Rs.</b>	<b>5.62</b>
						<b>Million</b>

<b>PROVIDING &amp; FIXING OF REINFORCED PLASTIC COMPOSITE (RPC) MANHOLE COVERS 24" I/D WITH RPC FRAME</b>							
<b>Sr. #</b>	<b>Description of items</b>	<b>Quantity</b>		<b>Rate</b>	<b>Unit</b>	<b>Amount</b>	
1	RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).	690.00	No	14829.63	P No	10,232,444.36	/-
					<b>Total:</b>	<b>10,232,444</b>	<b>/-</b>
		<b>Say Rs.</b>				<b>10.23</b>	<b>/-</b>

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**GENERAL ABSTRACT OF COST OF DISPOSAL STATION**

MRS 1<sup>st</sup> bi annual Jan-2023 to June-2023

S #	Description	Amount
1	<b><u>Sub Head-A Civil Works</u></b>	
A	Construction of Screening Chamber.	Rs. 7,109,025.00
B	Construction of Wet Wells.	Rs. 17,514,423.00
C	Construction of Pump House.	Rs. 32,638,952.00
D	Providing and Laying R.C.C Pipe 42" dia screen chamber to wet wel	Rs. 1,221,395.00
E	Supply and Installation of Valves and Delivery Pipes	Rs. 3,302,674.00
F	Construction of Electrical Sub-Station.	Rs. 2,868,555.00
G	Construction of Other Allied Works.	
	i. Boundary Wall.	Rs. 2,696,292.00
	ii. Main Gate.	Rs. 280,510.00
H	Construction of Staff Quarters	Rs. 6,312,394.00
	<b><u>Sub Head-B Electrical &amp; Mechanical Works</u></b>	
I	Providing and Installation of Pumping Machinery	Rs. 57,360,000.00
J	Supply and Installation of 400 KVA Transformer.	Rs. 3,821,528.40
K	Supply and Installation of 200 KVA Diesel Generator	Rs. 10,638,000.00
L	LT Change Over Pannel with PFI	Rs. 4,506,200.00
M	External & Internal electrification and cabling work	Rs. 9,276,277.00
<b>Total:-</b>		<b>Rs. 159546225.40</b>
		<b>159.55</b>
		<b>millions</b>

**QUANTITY SHEET****UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # A: Construction of screening Chamber:**

S #	Ref Sor Item/Page	Description	No.	Measurements			Quantity
				L	B	H	
1	C-22/1	Excavation of well in dry upto 20' (6 metre) below ground level, and disposal of soil within one chain 30 metre 0' to 5.0 ft. Depth (Sami circular area)		Area			
			2	96.15		5.00	961.50
			1	13.00	15.00	5.00	975.00
							1936.50
			2	96.15		3.00	576.90
			1	13.00	14.00	3.00	546.00
2	C-22/3	Wet sinking of well in ordinary soil (value of C upto 5), for depths below spring level, including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain (30 m):- i) i) from o' to 10'(0 to 3.0 m) depth  ii) ii) above 10' to 20'(3.0 to 6.0 m) depth	2	72.03		10.00	1440.60
			1	13.00	13.00	10.00	1690.00
							3130.60
			2	72.03		1.50	216.09
			1	13.00	13.00	1.50	253.50
							469.59
3	C6-1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete. (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Ratio 1:1.5:3 Core Wall  Bed of screening chamber   (a) (i) Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Ratio 1:1.5:3 Curve  Slab 1:2:4 Top screen Gate valve Lintle	2	17.00	0.75	14.50	369.75
			2	13.00	0.75	14.50	282.75
			2	28.65		0.75	42.98
			2	13.00	7.75	0.75	151.13
							846.60
			2	17.00	2.75	1.00	93.50
			2	13.00	(2.75+0.75)/2	2.50	113.75
							207.25
			1	39.60		0.67	26.53
			1	9.25	3.00	0.67	18.59
			2	7.75	1.125	1.00	17.44
							62.56
4	C-6/12	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust). (b) deformed bars.		1x 1116.41x2.5			2791.03
5	C-7/7	Pucca brick work other then building:- (i) Cement sand mortar 1:3 Circular masonry Outer wall Inner Wall Straight wall  Wall above NSL   Inter walls   Deduction Opening Pipe	2	19.375	0.75	14.50	421.41
			2	14.58	0.75	14.50	317.12
			2	13.00	0.75	14.50	282.75
			2	13.00	0.75	14.50	282.75
			2	17.00	1.500	1.50	76.50
			2	13.00	1.500	1.50	58.50
			2	16.38	1.125	3.00	110.53
			2	13.00	1.125	3.00	87.75
			1	7.75	1.125	15.38	134.09
			1	7.75	1.125	13.38	116.66
						Total	1888.05
			2	4.00	1.125	4.00	36.00
			2	3.14x(4.25) <sup>2</sup> /8x0.25	1.50		42.54
						Total	78.54
						Net	1809.52



S #	Ref Sor Item/Page	Description	No.	Measurements			Quantity
				L	B	H	
6	C-7/10	Extre for circular masonry					925.55
7	C-11/9	Cement plaster 1:3 upto 20' height. b) 1/2" thick. Circular masonry Outer wall	2	20.50		14.67	601.47
			2	13.00		14.67	381.42
		Wall above NSL	2	19.50		1.50	58.50
			2	13.00		1.50	39.00
			2	19.13		3.00	114.75
			2	19.50		3.00	117.00
		Inner Wall	2	13.50		18.88	509.76
			2	13.00		18.88	490.88
			4	7.75		14.67	454.77
						<b>Total</b>	<b>2767.55</b>
		Deduction					
		Opening	4	4.00		4.00	64.00
		Pipe	4	3.14x(4.25) <sup>2</sup> /x0.25			56.72
						<b>Total</b>	<b>120.72</b>
							<b>2646.83</b>
8	C-21/13	Providing and fixing 1/4"x1/4"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	15				15.00
9	C-13/9	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	2	20.50		17.42	714.22
			2	13.00		17.42	452.92
			2	19.50		1.50	58.50
			2	13.00		1.50	39.00
			2	19.13		3.00	114.75
			2	19.50		3.00	117.00
						<b>Total</b>	<b>1496.39</b>
10	C6-1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:2:4)	2	293.00		4.00	2344.00
11		RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).	1				1.00
12	C-6/30	Providing & fixing 12" (150mm) wide G.I 18 SWG stopper to expansion joint.	4	60.00			240.00
13	C-25/39	Providing and fixing stair railing of 2 1/2" (63mm) i/d G.I pipe, welded with 5/8"x5/8" (16x16) square M.S Bars 2'-9" (838 mm) high, fixed in each step, complete in all respects, including painting, polishing three coats	1	60.00			60.00
14	N.S	Penstock size 48"x48" Supply Installation and commissioning of Penstock size 4'x4' comprises of following parts:- (i) Stainless Steel "U" guide channel length 9ft thickness 16 SWG channel size 3".  (ii) Gate frame shall be cast iron steel using 1.5" thick plate supported with 1.5" x 1" around the plate and across the plate. (iii) Gate frame equipped with rubber channel and rubber mate to control water flow / speege. (iv) Lifting & lowering and lifted through gear head motor spindle length 30' spindle 2.50" dia mounted over the slab and shall be operated auto / manually	1				1.00
15	C25/ I 10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trasses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding erection in position (of darwing).  Angle iron 3"x3"x3/8" for cutting edge	1	1334			1334.00
			1	60.00	9.37		562.20
							<b>1896.20</b>
16	C25/ I 11	Erection in position iron trasses, staging of water tank etc.					1896.20
17	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:2.4) Ratio (1:1.5.3)	1	2406.56	0.88		2117.77
			1	1053.85	0.84		885.23
							<b>3003.01</b>
18	C3/13b	Rehandling of earth work upto lead of 50'.	1				6659.59
19	C-3/24	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.					6659.59

**COST ESTIMATE****UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # A: Construction of screening Chamber:**

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-22/1	Excavation of well in dry upto 20' ( 6 metre) below ground level, and disposal of soil within one chain (30 metre)	1000 Cft.	1936.50	9,650.70	18,688.58
		0' to 5.0 ft. Depth 5.01' to 10.0 ft. Depth	1000 Cft.	1122.90	10,079.30	11,318.05
2	C-22/3	Wet sinking of well in ordinary soil (value of C upto 5), for depths below spring level, including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain (30 m):-				
		i) i) from o' to 10'(0 to 3.0 m) depth ii) ii) above 10' to 20'(3.0 to 6.0 m) depth	1000 Cft. 1000 Cft.	3130.60 469.59	82,150.60 174,570.00	257,180.67 81,976.33
3	C6-1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete.				
		(a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Ratio 1:1.5:3	P.Cft	846.60	597.40	505,758.84
		(a) (i) Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Ratio 1:1.5:3	P.Cft	207.25	733.45	152,007.51
		(3) Type C (nominal mix 1:2:4)	P.Cft	62.56	674.30	42,185.56
4	C-6/12	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust).				
		(b) deformed bars. 60 grade	100 Kg	2791.03	35,068.45	978,770.96
5	C-7/7	Pucca brick work other then building:- (i) Cement sand mortar 1:3	100 Cft	1809.52	35,504.50	642,459.81
6	C-7/10	Extre for circular massonery Quantity as per circular massonery in above item	100 Cft	925.55	3,145.20	29,110.48
7	C-11/1-8	Cement plaster 1:3 upto 20' height. b) 1/2" thick.	100 Sft	2646.83	4,132.80	109,388.35
8	C-21/13	Providing and fixing 1¼"x1¼"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	1 No	15.00	700.50	10,507.50
9	C-13/19	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	100 Sft	1496.39	2,697.05	40,358.39
10	C-21/16	RPC Manhole Cover manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).	1 No	1.00	11,592.00	11,592.00
11	C-6/1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:2:4)	100 Cft	2344.00	43,837.20	1,027,543.97
12	C-6/30	Providing & fixing 12" (150mm) wide G.I 18 SWG stopper to expansion joint.	1 Rft	240.00	222.85	53,484.00
13	C-25/39	Providing and fixing stair railing of 2 1/2" (63mm) i/d G.I pipe, welded with 5/8"x5/8" (16x16) square M.S Bars 2'-9" (838 mm) high, fixed in each step, complete in all respects, including painting, polishing three coats.	Per Rft	60.00	2,248.90	134,934.00

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
14	N.S	Penstock size 48"x48" Supply Installation and commissioning of Penstock size 4'x4' comprises of following parts:- (i) Stainless Steel "U" guide channel length 9ft thickness 16 SWG channel size 3". (ii) Gate frame shall be cast iron steel using 1.5" thick plate supported with 1.5" x 1" around the plate and across the plate. (iii) Gate frame equipped with rubber channel and rubber mate to control water flow / speege. (iv) Lifting & lowering and lifted through gear head motor spindle length 30' spindle 2.75" dia mounted over the slab and shall be operated auto / manually	1 Job	1.00	1,992,000.00	1,992,000.00
15	C25/10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trusses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding errection in position	100 Kg	1896.20	38861.65	736,894.61
16	C25/11	Erection in position iron trasses, staging of water tank etc.	100 Kg	1896.20	1634.10	30,985.80
17	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	3003.01	6704.50	201,336.71
18	C3/13b	Rehandling of earth work upto lead of 50'.	1000 Cft.	6659.59	4546.10	30,275.16
19	C-3/24(a)	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.	1000 Cft	6659.59	1541.85	10,268.09

Total:- (Rs.) 7,109,025.35

Say Rs. 7,109,025.00

**QUANTITY SHEET****UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # B: Construction of Wet Well:**

S #	Ref Sor Item/Page	Description	No.	Measurements			Quantity
				L	B	H	
1	C-22/1	Excavation of well in dry upto 20' (6 metre) below ground level, and disposal of soil within one chain 30 metre 0' to 5.0 ft. Depth <b>(Sami circular area)</b>	1	3.14x45.5x45.5x0.25		5.00	2587.81
		5.01' to 10.0 ft. Depth	1	3.14x45x45x0.25		3.00	1552.69
2	C-22/3	Wet sinking of well in ordinary soil (value of C upto 5), for depths below spring level, including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain (30 m):-					
		i) from 0' to 10'(0 to 3.0 m) depth	1	3.14x40.25x40.25x0.25		10.00	4050.16
		ii) above 10' to 20'(3.0 to 6.0 m) depth	1	3.14x40.25x40.25x0.25		10.00	4050.16
		iii) above 20' to 30'(6.0 to 9.0 m) depth	1	3.14x40.25x40.25x0.25		4.53	1834.72
2	C6-1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete.					
		(a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:-					
		Ratio 1:1.5:3					
		Core Wall	1	3.14x36.5	0.75	27.00	2320.85
		Bed of wet well	1	3.14x35.25x35.25x0.25		1.00	975.41
							<b>3296.26</b>
		(a) (i) Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:-					
		(3) Type C (nominal mix 1:2:4)					
		Ratio 1:1.5:3					
		Curve Angle	1	3.14x37.75	2.75	1.00	325.97
			1	3.14x37.75	(2.75+0.75)/2	2.75	570.45
							<b>896.42</b>
							<b>4192.69</b>
3	C-6/12	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust).					
		(b) deformed bars.			1x4192.69x3		12578.06
4	C-7/7	Pucca brick work other then building:-					
		(i) Cement sand mortar 1:3					
		Circular masonry					
		Outer wall	1	3.14x38.75	0.75	27.00	2463.92
		Inner Wall	1	3.14x35.75	0.75	27.00	2273.16
		Wall above NSL	1	3.14x36.875	1.875	1.50	325.65
			1	3.14x36.50	1.500	1.50	257.87
			1	3.14x36.125	1.125	3.00	382.83
						<b>Total</b>	<b>5703.44</b>
		Deduction					
		Pipe	1	3.14x(4.25) <sup>2</sup> x0.25	1.50		21.27
						<b>Total</b>	<b>21.27</b>
						<b>Net</b>	<b>5682.17</b>
5	C-7/10	Extre for circular massonery					5682.17
6	C-11/9	Cement plaster 1:3 upto 20' height.					
		b) 1/2" thick.					
		Circular masonry					
		Outer wall	1	3.14x39.50		27.00	3348.81
		Wall above NSL outer	1	3.14x38.75		1.50	182.51
			1	3.14x38		1.50	178.98
			1	3.14x37.25		3.00	350.90
		Inner Wall	1	3.14x35		33.00	3626.70
						<b>Total</b>	<b>7687.90</b>
		Deduction					
		Pipe	1	3.14x(4.25) <sup>2</sup> x0.25			14.18
						<b>Total</b>	<b>14.18</b>
						<b>Net</b>	<b>7673.72</b>

S #	Ref Sor Item/Page	Description	No.	Measurements			Quantity
				L	B	H	
7	C-21/13	Providing and fixing 1¼"x1¼"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	27				27.00
8	C-13/9	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	1	3.14x39.50		27.00	3348.81
			1	3.14x38.75		1.50	182.51
			1	3.14x38		1.50	178.98
			1	3.14x37.25		3.00	350.90
			1	3.14x40.5		3.00	381.51
						<b>Total</b>	<b>4442.71</b>
11	C6-1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:2:4)	1	3.14x35*35*0.25		7.50	7212.19
			1	3.14x38*38*0.25		2.75	3117.24
							<b>10329.42</b>
12	C-6/30	Providing & fixing 12" (150mm) wide G.I 18 SWG stopper to expansion joint.	6	113.43			<b>680.58</b>
13	C-25/39	Providing and fixing stair railing of 2 1/2" (63mm) i/d G.I pipe, welded with 5/8"x5/8" (16x16) square M.S Bars 2'-9" (838 mm) high, fixed in each step, complete in all respects, including painting, polishing three coats	1	3.14x35.50			111.47
14	C25/ I 10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trasses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding erection in position (of drawing). Angle iron 3"x3"x3/8" for cutting edge	1	128.74	9.37		1206.29
15	C25/ I 11	Erection in position iron trasses, staging of water tank etc.					1206.29
16		Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:2.4) Ratio (1:1.5.3)	1	10329.42	0.88		9089.89
			1	4192.69	0.84		3521.86
							<b>12611.75</b>
17	C3/13b	Rehandling of earth work upto lead of 50'.	1				14075.53
18	C-3/24	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.					14075.53

**COST ESTIMATE****UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # B: Construction of Wet Well:**

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-22/1 & C-3/16	Excavation of well in dry upto 20' ( 6 metre) below ground level, and disposal of soil within one chain (30 metre) 0' to 5.0 ft. Depth 5.01' to 10.0 ft. Depth	1000 Cft. 1000 Cft.	2587.81 1552.69	9,650.70 10,079.30	24,974.20 15,650.00
2	C-22/3	Wet sinking of well in ordinary soil (value of C upto 5), for depths below spring level, including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain (30 m):- i) i) from 0' to 10'(0 to 3.0 m) depth ii) ii) above 10' to 20'(3.0 to 6.0 m) depth iii) above 20' to 30'(6.0 to 9.0 m) depth	1000 Cft. 1000 Cft. 1000 Cft.	4050.16 4050.16 1834.72	82,150.60 174,570.00 214,855.40	332,722.77 707,035.78 394,199.67
3	C6-1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete. (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Ratio 1:1.5:3	P.Cft	3296.26	597.40	1,969,188.15
		(a) (i) Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Ratio 1:1.5:3	P.Cft	896.42	733.45	657,479.94
4	C-6/12	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust). (b) deformed bars. 60 grade	100 Kg	12578.06	35,068.45	4,410,928.93
5	C-7/7	Pucca brick work other then building:- (i) Cement sand mortar 1:3	100 Cft	5682.17	35,504.50	2,017,427.27
6	C-7/10	Extre for circular massonery Quantity as per circular massonery in above item	100 Cft	5682.17	3,145.20	178,715.72
7	C-11/1-8	Cement plaster 1:3 upto 20' height. b) 1/2" thick.	100 Sft	7673.72	4,132.80	317,139.44
8	C-21/13	Providing and fixing 1/4"x1/4"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	1 No	27.00	700.50	18,913.50
9	C-13/1-9	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	100 Sft	4442.71	2,697.05	119,822.04
10	C-6/1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:2:4)	100 Cft	10329.42	43,837.20	4,528,129.60
11	C-6/30	Providing & fixing 12" (150mm) wide G.I 18 SWG stopper to expansion joint.	1 Rft	680.58	222.85	151,667.25
12	C-25/39	Providing and fixing stair railing of 2 1/2" (63mm) i/d G.I pipe, welded with 5/8"x5/8" (16x16) square M.S Bars 2'-9" (838 mm) high, fixed in each step, complete in all respects, including painting, polishing three coats	Per Rft	111.47	2,248.90	250,684.88
13	C25/ I 10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trasses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding erection in position	100 Kg	1206.29	38,861.65	468,785.67
14	C25/11	Erection in position iron trasses, staging of water tank etc.	100 Kg	1206.29	1,634.10	19,712.05

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
15	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	12611.75	6,704.50	845,554.59
16	C3/13b	Rehandling of earth work upto lead of 50'.	1000 Cft.	14075.53	4,546.10	63,988.78
17	C-3/24(a)	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.	1000 Cft	14075.53	1,541.85	21,702.36
<b>Total:- (Rs.)</b>						<b>17,514,422.59</b>
<b>Say Rs.</b>						<b>17,514,423.00</b>

**QUANTITY SHEET****UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # C: Construction of pump house:**

S #	Ref Sor Item/Page	Description	No.	Measurements			Quantity
				L	B	H	
1	C-22/1	Excavation of well in dry upto 20' (6 metre) below ground level, and disposal of soil within one chain 30 metre 0' to 5.0 ft. Depth <b>(Sami circular area)</b>	05x2	3.14x34x34x0.25		5.00	4537.30
			1	34.00	34.00	5.00	5780.00
						<b>Total</b>	<b>10317.30</b>
		5.01 to 10ft. Depth	0.5x2	3.14x32.5x32.5x0.25		3.00	2487.47
			1	32.50	32.50	3.00	3168.75
						<b>Total</b>	<b>5656.22</b>
2	C-22/3	Wet sinking of well in ordinary soil (value of C upto 5), for depths below spring level, including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain (30 m):- i) from o' to 10'(0 to 3.0 m) depth	1	3.14x27.5x27.5x0.25		10.00	1890.63
		ii) above 10' to 20'(3.0 to 6.0 m) depth	1	3.14x27.5x27.5x0.25		2.50	472.66
3	C6-1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete.  (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:-  Ratio 1:1.5:3 Core Wall	0.5x2	3.14x24.25	0.75	21.50	1240.50
			2	28.00	0.75	21.50	903.00
			0.5x2	3.14x22x22x0.25		1.00	379.94
			4	5.00	5.00	1.50	150.00
		Foundation				<b>Total</b>	<b>2673.44</b>
		(a) (i) Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- <b>Ratio 1:1.5:3</b> Curve	2x0.5	3.14x25	2.75	1.00	215.88
			2x0.5	3.14x25	(2.75+0.75)/2	2.50	343.44
			2	60.00	2.75	1.0	330.00
			2	60.00	(2.75+0.75)/2	2.50	525.00
		Column from ground floor to roof stub for gentry rail beam	8	1.50	1.50	34.50	621.00
			4	1.50	1.00	1.00	6.00
			4	1.50	0.50	1.00	3.00
						<b>Total</b>	<b>2044.31</b>
		<b>Ratio 1:2:4</b> Pump House Beem	4	25.25	1.25	1.75	220.94
			0.5x2	3.14x26.50x26.50x0.25	0.75	413.45	
			1	28.00	26.50	0.75	556.50
			4	26.50	1.25	1.25	165.63
		Tie Beam at level of 10 ft.	2	28.00	0.75	1.00	42.00
			0.5x2	3.14x26.5	0.75	1.00	62.41
			2	28.00	1.00	1.50	84.00
			0.5x2	3.14x28.50x28.50x0.25	0.50	318.81	
		Gentry Crane Beam	1	60.00	27.75	0.50	832.50
			4	26.50	1.00	1.00	106.00
			1	140.78	0.33	1.00	46.46
						<b>Total</b>	<b>2848.69</b>
		Ground floor roof					
		Beams					
		Parapit					
4	C-6/12	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust).  (b) deformed bars.		1x7566.43x3			22699.30



S #	Ref Sor Item/Page	Description	No.	Measurements			Quantity
				L	B	H	
5	C-7/7	Pucca brick work other then building:-					
		(i) Cement sand mortar 1:3					
		Circular masonry pump house					
		Outer wall	0.5x2	3.14x25.75	0.75	21.50	1291.13
			2	28.00	0.75	21.50	903.00
		Inner Wall	0.5x2	3.14x22.75	0.75	21.50	1151.89
			2	28.00	0.75	21.50	903.00
		Ground Floor					
		Wall	0.5x2	3.14x23.875	0.75	14.25	801.22
			2	28.00	0.75	14.25	598.50
						<b>Total</b>	<b>5648.73</b>
		Deduction					
6	C-7/10	Extre for circular massonery					5451.86
7	C-11/9	Cement plaster 1:3 upto 20' height.					
		b) 1/2" thick.					
		Pump House					
		Circular masonry					
		Outer wall	0.5x2	3.14x26.5		21.50	1789.02
			2	28.00		21.50	1204.00
		Inner Wall	0.5x2	3.14x22		21.50	1485.22
			2	28.00		21.50	1204.00
		Ground floor					
		Wall	0.5x2	3.14x25		14.25	1208.12
			4	28.00		14.25	1596.00
						<b>Total</b>	<b>8486.35</b>
8	C-13/9	Bitumen coating to plastered or cement concrete surfaces.					
		(i) 20 lbs per 100 sq.ft.					
			0.5x2	3.14x26.5		24.25	2246.28
			2	28.00		24.25	2170.13
							<b>4416.41</b>
9	C6-1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate).					
		Ratio (1:2:4)	0.5x2	3.14x23*23*0.25		4.50	1868.69
			1	28.00	22.00	4.50	2772.00
						<b>Total</b>	<b>4640.69</b>
10	C25/ I 10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trasses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding erection in position (of darwing).					
		Angle iron 3"x3"x3/8" for cutting edge	1	133.72	9.37		1252.96
11	C25/ I 11	Erection in position iron trasses, staging of water tank etc.					1252.96
12	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor.					
		(Ch.No. 1, Item.No. 1)					
		Ratio (1:2.4)	1	7489.38	0.88		6590.65
		Ratio (1:1.5.3)	1	4717.75	0.84		3962.91
							<b>10553.56</b>
13	C3/13b	Rehandling of earth work upto lead of 50'.	1				18336.80
14	C-3/24	(ii) Compaction of earth work.					
		(a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.					18336.80

S #	Ref Sor Item/Page	Description	No.	Measurements			Quantity
				L	B	H	
15	C-9/20	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.: (a) 4" dia cast iron down pipe.	2	15.00			30.00
16	C-9/21	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	2	2.00			4.00
17	C-9/22	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting	2	2.00			4.00
18	C-10/37	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement (ii) 1/2" thick	2	133.72	0.50		133.72
19	C-10/22(a)	1-1/2" thick mosaic flooring consisting of 1/2" mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish (a) Using grey cement	0.5x2 2 0.5x2 2	3.14x22*22*0.25 28.00 3.14x23*23*0.25 28.00	22.00 22.00		379.94 1232.00 415.27 1232.00
						<b>Total</b>	<b>3259.21</b>
20	C-7/32	First class brick tiles lead by laying tiles in strecher course in cement sand mortar reinforced with 18 SWG hoop iron strips placed at 2' apart horizontally and 1' interval vertically in 1:3 ratio.	1	86.35	22.00		1899.70
21	C-10/39	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaic flooring into panes! approximate size (3'x3')	14 5	22.00 68.00			308.00 340.00 <b>648.00</b>
22	C-9/15	Khuras on roof 2'x2'x6"	2				2.00
23	C-13/5	Preparing surface and painting of doors & windows, guard bar gates etc. i) Priming coat ii) Each subsequent coat of paint (two coats).	2 7	10.00 4.00		9.0 6.0	180.00 168.00 <b>348.00</b>
		ii) Each subsequent coat of paint (two coats).		Qty as above			348.00
24	C-25/32	Making and fixing grating in opening, including fixing at site with flat iron 2"x3/8" and 3/4" square bars, at 4" centre to centre.	7	4.00		6.0	168.00
25	C-9/5	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	0.5x2 2	3.14x25*25*0.25 28.00	24.00		490.63 1344.00 <b>1834.63</b>
26	C-11/22	Priming coat of chalk under distemper.	1 1	3.14x22 28.00		33.50 33.50	2314.18 938.00 <b>3252.18</b>
27	C-11/23(a)	Distempering. (iii) 3 coats.	1 1	3.14x22 28.00		33.5 33.5	2314.18 938.00 <b>3252.18</b>
28	C-13/32	Prepare surface and painting with water proof coloured cement finish like duracem, buxeem or other finished with similar specifications on walls etc. (a) New surface (b) 1st Coat (c) 2nd and subsequent coat	1 2	3.14x26.5 28.00		15.00 15.00	1248.15 840.00 <b>2088.15</b>
29	C-25/41	P/F steel windows with openable glazed pannels, using mild steel box sections 1-1/2"x1-1/2"x18 SWG glass panels, M.S channel 1/2"x1/2"x1/16" duly screwed with leaves, & filled with rubber felt in between glass & M.S channel brass fittings, holdfast, duly (a) Fixed with wire gauze, 22 SWG & glass pane 5 mm thick.	7	4.00		6.0	168.00
30	C-25/30	Making and fixing steel grated doors complete with locking arrangement, angle iron frame 2"x2"x3/8" and 3/4" square walls 4" center to center.	1	10.00		10.0	100.00
31	N.S	Providing and installation of Ganti crane of 10-ton capacity with steel roap of of 3/4" dia 100 Rft, M.S girder 10"x24"x1/2" of 23ft long cast also includes both side M.S railing of suitable size to be fixed an R.C.C beam bolting clumping complete in all respect, shipment document should be provided is client before payment.	1				1.00

**COST ESTIMATE****UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # C: Construction of pump house:**

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-22/1	Excavation of well in dry upto 20' ( 6 metre) below ground level, and disposal of soil within one chain (30 metre) 0' to 5.0 ft. Depth 5.01' to 10.0 ft. Depth	1000 Cft. 1000 Cft.	10317.30 5656.22	9,650.70 10,079.30	99,569.17 57,010.73
2	C-22/3	Wet sinking of well in ordinary soil (value of C upto 5), for depths below spring level, including charges of machinery, shoring, kentledge and removal of excavated spoil within one chain (30 m):- i) i) from 0' to 10'(0 to 3.0 m) depth ii) ii) above 10' to 20'(3.0 to 6.0 m) depth	1000 Cft. 1000 Cft.	1890.63 472.66	82,150.60 174,570.00	155,315.98 82,511.60
3	C6-1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete. (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Ratio 1:1.5:3  (a) (i) Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Ratio 1:1.5:3 Ratio 1:2:4	P.Cft   P.Cft P.Cft	2673.44   2044.31 2848.69	597.40   733.45 674.30	1,597,110.82   1,499,401.00 1,920,868.44
4	C-6/12	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust). (b) deformed bars. 60 grade	100 Kg	22699.30	35,068.45	7,960,293.33
5	C-7/7	Pucca brick work other then building:- (i) Cement sand mortar 1:3	100 Cft	5451.86	35,504.50	1,935,655.02
6	C-7/10	Extre for circular massonery Quantity as per circular massonery in above item	100 Cft	5451.86	3,145.20	171,471.85
7	C-11/1-8	Cement plaster 1:3 upto 20' height. b) 1/2" thick.	100 Sft	7940.35	4,132.80	328,158.78
8	C-13/1-9	Bitumen coating to plastered or cement concrete surfaces. (i) 20 lbs per 100 sq.ft.	100 Sft	4416.41	2,697.05	119,112.79
9	C-6/1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio (1:2:4)	100 Cft	4640.69	43,837.20	2,034,349.65
10	C25/ I 10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trasses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding errection in position	100 Kg	1252.96	38,861.65	486,919.53
11	C25/11	Erection in position iron trasses, staging of water tank etc.	100 Kg	1252.96	1,634.10	20,474.56
12	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	10553.56	6,704.50	707,563.52
13	C3/13b	Rehandling of earth work upto lead of 50'.	1000 Cft.	18336.80	4,546.10	83,360.93
14	C-3/24(a)	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.	1000 Cft	18336.80	1,541.85	28,272.60

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
15	C-9/20	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.: (a) 4" dia cast iron down pipe.	Rft.	30	500.00	15,000.00
16	C-9/21	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	No.	4	1,258.20	5,032.80
17	C-9/22	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting	No.	4	666.00	2,664.00
18	C-10/38	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement (ii) 1/2" thick	100 Sft	133.72	28,238.40	37,760.39
19	C-10/22(a)	1-1/2" thick mosaic flooring consisting of 1/2" mosaic toping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish (a) Using grey cement	100 Sft	3259.21	25,985.25	846,912.57
20	C-7/31	First class brick tiles lead by laying tiles in strecher course in cement sand mortar reinforced with 18 SWG hoop iron strips placed at 2' apart horizontally and 1' interval vertically in 1:3 ratio.	100 Sft	1900	19,106.35	362,963.33
21	C-10/39	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaic flooring into panesl approximate size (3'x3')	P/Rft.	648.00	7.90	5,119.20
22	C-9/15	Khuras on roof 2'x2'x6"	Each.	2.00	1,036.65	2,073.30
23	C-13/5c	Preparing surface and painting of doors & windows, guard bar gates etc. i) Priming coat ii) Each subsequent coat of paint (two coats).	100 Sft 100 Sft	348 348	1,063.80 1,480.20	3,702.02 5,151.10
24	C-25/32	Making and fixing grating in opening, including fixing at site with flat iron 2"x3/8" and 3/4" square bars, at 4" centre to centre.	P/Sft.	168.00	1,139.80	191,486.40
25	C-9/5	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	100 Sft	1835	12,818.25	235,166.82
26	C-11/22	Priming coat of chalk under distemper.	100 Sft	3252	348.00	11,317.59
27	C-11/23(a)	Distempering. (iii) 3 coats.	100 Sft	3252	1,665.90	54,178.07
28	C-13/32	Prepare surface and painting with water proof coloured cement finish like duracem, buxeem or other finished with similar specifications on walls etc. (a) New surface (b) 1st Coat (c) 2nd and subsequent coat	100 Sft 100 Sft	2088 2088	1,024.30 1,649.30	21,388.92 34,439.86
29	C-25/41	P/F steel windows with openable glazed pannels, using mild steel box sections 1-1/2"x1-1/2"x18 SWG glass panels, M.S channel 1/2"x1/2"x1/16" duly screwed with leaves, & filled with rubber felt in between glass & M.S channel brass fittings, holdfast, duly (a) Fixed with wire gauze, 22 SWG & glass pane 5 mm thick.	P Sft	168.00	1,393.10	234,040.80
30	C-25/30	Making and fixing steel grated doors complete with locking arrangement, angle iron frame 2"x2"x3/8" and 3/4" square walls 4" center to center.	P Sft	100	2,331.35	233,135.00
31	N.S	Providing and installation of Ganti crane of 10-ton capacity with steel roap of of 3/4" dia 100 Rft, M.S girder 10"x24"x1/2" of 23ft long cast also includes both side M.S railing of suitable size to be fixed an R.C.C beam bolting clumping complete in all respect, shipment document should be provided is client before payment.	Each	1	11,050,000.00	11,050,000.00

Total 32,638,952.45

Say Rs. 32,638,952.00

## QUANTITY FOR SEWER

## UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY

## Sub Head # D: Providing and Laying R.C.C. Pipe 42" dia:

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
1	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock.					
	0-7' depth					
	42"	1	40.00	12.00	7.00	3360.00
	9"	1	215.00	3.00	5.00	<u>3225.00</u> <b>6585.00</b>
2	7-15' depth					
	42"	1	40.00	10.00	1.00	400.00
	Earthwork excavation of trenches in open cutting for sewers and manhole chambers, etc. below sub-soil water level to correct section and dimensions according to templates and levels, including shoring, timbering and shuttering of M.S. sheets on both sides of the trenches					
	i) 0 ft. to 4.0 ft. (0 to 1.20 m) depth below SSWL.	1	40.00	6.75	4.00	1,080.00
3	ii) 4.01 ft. to 8.0 ft. (1.22 to 2.4 m) depth below SSWL	1	40.00	6.75	3.00	810.00
	Lowering of sub-soil water table, by installation of tubewells along sewer line and pumping out water, for excavation in open cutting below sub-soil water level, concreting, curing, laying and jointing pipes, filling haunches, etc. till the completion of sewer line, including disposal of pumped out water:-					
	6) 0-6 ft. (0 to 1830 mm) below SSWL	1	40.00			40.00
	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-III, Wall-B, including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.					
4	42" i/d.		40	-	-	40.00
	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to BS5911 specification, Class-L, Wall-B, including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete.					
	9" i/d.	1	215			215.00
	(i) Rehandling of earth work.					
6	(a) Lead upto a single throw of Kassi, phaorah or shovel.		6985.00	-	-	6985.00
	(ii) Compaction of earth work.					
	(a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.		6985.00	-	-	6985.00
	Providing and laying crushed stone aggregate of 1/4" to 1" gauge under and around the sewer pipe, including leveling, manual compaction, complete in all respects					
7	60" i/d.	1	40.00	6.25	3.00	750.00
	Deduction	1	40.00	0.5*3.14*4.25*4.25*0.25		<u>283.58</u>
					Net	<b>466.42</b>
	Providing and laying sand under and around the sewer pipe, including leveling, manual compaction, complete in all respect.		215.00	1.48		318.20
9	Making connection with screening chamber and wet well including dismantling of brick work and RCC core wall, erection and position and PCC block 6'x6'x2' complete in all respect.	3				3.00

## QUANTITY FOR MANHOLE

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # D: Providing and Laying R.C.C. Pipe 42" dia:**

S #	Name of Work	Nos.	Qty. of each Chamber	T.Quantity
1	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock. 0-7'ft. Depth. 9" dia	6	225.00	1350.00
2	Dry rammed brick or stone ballast 1-1/2" to 2" (40mm to 50mm) gauge. 9" dia	6	16.50	99.00
3	Cement concrete plain including, placing compacting finishing and curing complete (including screening and washing of stone aggregate). Ratio 1:3:6 9" dia	6	16.58	99.48
	Ratio 1:2:4 9" dia	6	18.58	111.48
4	Pucca brick work other than building upto 10' height Cement sand mortar Ratio 1:3. 9" dia	6	48.53	291.18
5	Extra for pucca brick work in stening of wells or any other circular masonry.			291.18
6	Extra for making and finishing benching floor work in manhole chamber 1/8" (3mm) thick cement finish. 9" dia	6	12.56	75.36
7	Providing and fixing 1/4"x1 1/4"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	6	2.00	12.00
8	Cement plaster 1:3 up to 20' height 1/2" thick. 9" dia	6	67.52	405.12
9	RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).	6	1.00	6.00
10	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)			
	Ratio (1:3:6) 99.48	0.92		91.92
	Ratio (1:2:4) 111.48	0.88		98.10
				<b>190.02</b>

## COST ESTIMATE

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # D: Providing and Laying R.C.C. Pipe 42" dia:**

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-3/42	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock. (i) 0 ft to 7 ft. Depth (ii) 7 ft. to 15ft. Depth	1000 Cft 1000 Cft	7935.00 400.00	15688.05 22379.80	124,484.68 8,951.92
2	C-3/43	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock. i) 0 ft. to 4.0 ft. (0 to 1.20 m) depth below SSWL. ii) 4.01 ft. to 8.0 ft. (1.22 to 2.4 m) depth below SSWL	1000 Cft. 1000 Cft.	1,080.00 810.00	22,338.80 28,683.10	24,125.90 23,233.31
3	C-21/6	Lowering of sub-soil water table, by installation of tubewells along sewer line and pumping out water, for excavation in open cutting below sub-soil water level, concreting, curing, laying and jointing pipes, filling haunches, etc. till the completion of sewer line, including disposal of pumped out water:- 6) 0-6 ft. (0 to 1830 mm) below SSWL	1 Rft	40.00	5,123.35	204,934.00
4	C-21/4	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-III, Wall-B, including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete. 42" i/d.	1 Rft.	40	6,601.05	264,042.00
5	C-21/1	Providing and Laying R.C.C. pipe sewer moulded with cement concrete 1:1.5:3 conforming to ASTM specification C-76-79, Class-II, Wall-B, including carriage of pipe from factory to site of work, lowering in trenches to correct alignment and grade, jointing with rubber ring, cutting pipes where necessary, testing etc. complete. 9" i/d.	1 Rft.	215	568.60	122,249.00
6	C-3/13a	(i) Rehandling of earth work. (a) Lead upto a single throw of Kassi, pharaoh or shovel.	1000 Cft	6985	3,247.20	22,681.69
	C-3/24(a)	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.	1000 Cft	6985	1,541.85	10,769.82
7	N.S	RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26" dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).	1 set.	6	11592.00	69,552.00
8	C-21/9	Extra for making and finishing benching floor work in manhole chamber with 1/8" thick cement finish.	100 Sft	75.36	3,541.50	2,668.87
9	C-6/5	Cement concrete plain including, placing, compacting, finishing, and curing complete (including screening and washing of stone aggregate. (I) P.C.C. 1:3:6 (II) P.C.C. 1:2:4	100 Cft 100 Cft	99.48 111.48	38182.80 43837.20	37,984.25 48,869.71
10	C-7/7i	Pacca brick work other than building upto 10 ft height in 1:3 cement sand mortar.	100 Cft	291.18	35504.50	103,382.00
11	C-7/10	Extra for pacca brick work in steining of wells or any other circular masonry.	100 Cft	291.18	3145.20	9,158.19
12	C-11/8b	Cement plaster 1/2" thick (1:3) cement sand mortar upto 20' height.	100 Sft	405.12	4132.80	16,742.80
13	C-6/2	Dry rammed bricks or stone ballest 1.5" to 2" gauge.	100 Cft	99	11008.80	10,898.71
14	C-21/23	Providing and laying crushed stone aggregate of 1/4" to 1" gauge under and around the sewer pipe, including leveling, manual compaction, complete in all respects.	100 Cft	750	11437.20	85,779.00

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
15	C-10/3	Supplying and filling sand under floor; or plugging in wells.. (10/3)	100 Cft	318.2	3,061.20	9,740.74
16	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	190.02	6704.50	12,740.02
17	C-21/13	Providing and fixing 1¼"x1¼"x3/16" (31x31x5 mm) angle iron step, in manhole chambers, including carriage and setting the same in work to correct lines and levels.	1 Each	12	700.50	8,406.00
<b>Total:- (Rs.)</b>						<b>1,221,394.63</b>
<b>Say:- (Rs.)</b>						<b>1,221,395.00</b>



**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # E: Supply and Installation of Valves and Delivery Pipes:**

S.No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
	<b><u>Pipes for Suction and Delivery</u></b>				
1	Supplying, fixing and testing ductile iron pipe with flange including the cost of specials, (tee/ pipe / alpine steel or approved equivalent) complying Class K-12, ISO - 2531 & BS-4772, & jointing material with all fittings and accessories complete in all respect as approved by the Engineer Incharge (C-23/61) 12" dia	Rft	105	16,963.55	1,781,172.75
2	P/F C.I Flanged Flexible/dressing coupling of complete. 12" dia	No.	3	42,000.00	126,000.00
3	Providing and fixing heavy duty Gate valve of specified diameter and material for pressure rating PN-16 mde of Crane (USA), Hatersly (UK) or Scon (Pakistan) i/c the cost of all accessories flanges,nut/bolt and gasket where required complete in all respect as approved and directed by the Engineer Incharg (C-23/52b) 12" dia	No.	4	202,496.00	809,984.00
4	Providing and fixing non return valve C.I Body having full flow with stainless steel body seat / ring & synthatic imported rubber sheet on other side and imported stain less steel shaft pin openable type complete. 12" dia	No.	6	56,000.00	336,000.00
5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-100) working presure pipe, Beta/ Dadex/ Popular/ IIL or equivalent including the cost of specials, in trenches, as approved & directed by the engineer incharge, complete in all respects (C-23/43 d) 315mm PN-12.5	Rft	25	5,621.80	140,545.00
6	P/F M.S dead plate / taper flange3/4" including nut bolt and rubber sheet. 12" dia	Each	12	9,081.00	108,972.00
				<b>Total:-(Rs.)</b>	<b>3,302,673.75</b>
				<b>Say:-(Rs.)</b>	<b>3,302,674.00</b>

## QUANTITY SHEET

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # F: Construction of Electrical Sub-Station:**

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
1	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and ramming lead upto one chain and lift. (i) 0 ft. to 5.0 ft. depth.	2	39.75	2.875	2.25	514.27
		5	14.75	2.875	2.25	477.07
		1	5.75	1.500	2.25	19.41
	Ramp	2	10.00	2.875	2.25	129.38
		2	5.00	1.500	1.25	18.75
	Step				<b>Total</b>	<b>1158.87</b>
2	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). <b>Ratio (1:4:8)</b> Under Foundation	2	39.75	2.875	0.33	75.43
		5	14.75	2.875	0.33	69.97
		1	5.75	1.500	0.33	2.85
		2	10.00	2.875	0.33	18.98
		2	5.00	1.500	0.33	4.95
					<b>Total</b>	<b>172.17</b>
	Under Floor deduction	1	39.75	14.750	0.250	146.58
		2	39.75	0.750	0.125	7.45
		5	14.75	0.750	0.125	6.91
					<b>Net</b>	<b>132.21</b>
3	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shapge and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete. (a) (i) Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (3) Type C (nominal mix 1:2:4) Ramp lintles Roof Parapit	2	10.00	10.00	0.42	84.00
		2	39.75	0.75	0.75	44.72
		1	42.75	18.50	0.42	332.17
		1	123.00	0.33	1.25	50.74
					<b>Total</b>	<b>511.62</b>
4	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust (b) deformed bars.	1	511.62	5.50	2.204	1276.74
6	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.: (a) 4" dia cast iron down pipe.	2	50.00			100.00
7	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	2	2.000			4.00
8	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting	2	2.000			4.00
9	P/L damp proof course of cement concrete 1:2:4 (using cement, sand and shingle), including bitumen coating (b) With two coats of bitumen (ii) 2" thick	2	39.75	0.75		59.63
		5	14.75	0.75		55.31
						<b>114.94</b>
10	P/L vertical damp proof course with cement sand plaster and bitumen coating. (b) with two coats of bitumen (i) Ratio 1:4 (b) 3/4" thick	2	39.75	2.00		159.00

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
11	Pucca brick work in foundation and plinth in:- (i) Cement sand mortar (1:5) Wall	2	39.75	1.88	0.50	74.53
		2	14.75	1.875	0.50	27.66
		2	39.75	1.50	0.50	59.63
		2	14.75	1.500	0.50	22.13
		2	39.75	1.13	1.00	89.44
		2	14.75	1.125	1.00	33.19
		2	39.75	0.75	5.00	298.13
		2	14.75	0.750	5.00	110.63
		1	5.75	0.750	7.25	31.27
		6	5.00	2.000	2.50	150.00
	Steps	6	5.00	1.500	0.67	30.15
					<b>Total</b>	<b>926.73</b>
12	Pucca brick work in ground floor:- (i) Cement sand mortar (1:4)	2	39.75	0.75	11.00	655.88
		2	14.75	0.75	11.00	243.38
		1	5.75	0.38	11.00	23.72
					<b>Total</b>	<b>922.97</b>
	Deduction (Area of door & window)	6	6.00	0.75	6.00	27.00
		6	3.500	0.75	7.00	15.75
		2	2.500	0.75	7.00	3.75
		2	2.000	0.75	2.50	3.00
					<b>Total</b>	<b>49.50</b>
					<b>Net</b>	<b>873.47</b>
13	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement (ii) 1/2" thick	2	39.75		0.50	39.75
		6	14.00		0.50	42.00
		6	5.00		2.00	60.00
		6	5.00		1.50	45.00
	Door Jambs				<b>Total</b>	<b>186.75</b>
	Deduction	8	3.50		0.50	14.00
					<b>Net</b>	<b>172.75</b>
14	First class brick tiles elad by laying tiles in strecher course in cement sand mortar reinforced with 18 SWG hoop iron strips placed at 2' apart horizontally and 1' interval vertically in 1:3 ratio.	1	25.00	2.00	2.00	100.00
15	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaie flooring into panesl approximate siae (3'x3').	1	265.00			265.00
16	Cement plaster 1:4 upto 20' height. b) 1/2" thick.	4	39.75		11.00	1749.00
		12	14.75		11.00	1947.00
		2	5.75		11.00	126.50
					<b>Total</b>	<b>3822.50</b>
	Deduction	3	6.00		6.00	108.00
		1	3.500		7.00	24.50
		1	2.500		7.00	17.50
		1	2.000		2.50	5.00
					<b>Total</b>	<b>155.00</b>
					<b>Net</b>	<b>3667.50</b>
18	Painting new surfces: Preparing surface and painting of doors & windows, any type (including edges)". i) Priming coat (Door) (Window)	3	3.50		7.00	73.50
		2	2.50		7.00	35.00
		3	6.00		6.00	108.00
		2	2.00		2.50	10.00
	ii) Each subsequent coat of paint (two coats).	1	8.00		8.00	64.00
					<b>Total</b>	<b>290.50</b>
19	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	1	39.75	14.92		593.07
20	Priming coat of chalk under distemper. Quantity as per internal cement plaster		3667.500			3667.50
21	Distempering. (iii) 2 coats.					3667.50

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
22	Supplying filling sand under floor.	1	39.00	14.00	0.33	180.18
23	Filling, watering & ramming earth under floor. (i) With surplus earth from foundation etc. Total Area of floor = 1164 under ramp	1	39.00 9.50	14.00 6.00	6.00 3.00	3276.00 <u>171.00</u> <b>3447.00</b>
24	1-1/2" thick mosaic flooring consisting of 1/2" mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish (a) Using grey cement	1	39.00	14.00		546.00
25	P/F steel windows with openable glazed pannels, using Beam section for frame 1-1/2"x1" x5/8"-x1/8" Z section for leaves 3/4" x1"x3/4"x1/8", T section shashes 1"x1"x1/8" glass panes, Wooden screed for glazing etc. (a) fixed with wire gauge, 24 SWG & glass pane 5 mm thick.	6	6.00		6.00	216.00
26	Making and fixing steel grated door with 1/16" inches thick sheeting surrounding by angle iron 1"x1"x1/8" including angle iron frame 2"x2"x3/16" and flat iron 2"x1/8" with locking arrangement completed in all respect as shown in the drawings and specified	5 1	3.50 8.00		7.00 8.00	122.50 <u>64.00</u> <b>186.50</b>
27	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:4:8) Ratio (1:2:4)	1 1	132.21 511.62	0.95 0.88		125.30 450.23 <b>575.52</b>
			<b>Total</b>			

## COST ESTIMATE

## UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY

## Sub Head # F: Construction of Electrical Sub-Station:

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-3/21	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and ramming lead upto one chain and lift (i) 0 ft. to 5.0 ft. depth.	1000 Cft	1158.87	13669.90	15,841.60
2	C-6/I-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). <b>Ratio (1:4:8)</b>	100 Cft	132.21	34098.00	45,081.29
3	C-6/I-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shapge and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete. (a) (i) Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (3) Type C (nominal mix 1:2:4)	1 Cft	511.62	674.30	344,987.89
4	C-6/12	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust). (b) deformed bars. 60 grade	100 Kg	1276.74	35068.45	447,732.24
6	C-9/1-20	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.: (a) 4" dia cast iron down pipe.	1 Rft	100.00	500.00	50,000.00
7	C-9/1-21	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	1 Each	4.00	1258.20	5,032.80
8	C-9/1-22	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting	1 Each	4.00	666.00	2,664.00
9	C-6/36	P/L damp proof course of cement concrete 1:2:4 (using cement, sand and shingle), including bitumen coating (b) With two coats of bitumen (ii) 2" thick	100 Sft	114.94	12315.15	14,154.73
10	C-6/38	P/L vertical damp proof course with cement sand plaster and bitumen coating. (b) with two coats of bitumen (i) Ratio 1:4 (b) 3/4" thick	100 Sft	159.00	7415.30	11,790.33
11	C-7/4-i	Pucca brick work in foundation and plinth in: (i) Cement sand mortar (1:5)	100 Cft	926.73	31566.45	292,535.17
12	C-7/I-5	Pucca brick work in ground floor:- (i) Cement sand mortar (1:5)	100 Cft	873.47	34359.60	300,120.37
13	C-10/38	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement	100 Sft	172.75	28238.40	48,781.84
14	C-7/I-31	First class brick tiles clad by laying tiles in strecher course in cement sand mortar reinforced with 18 SWG hoop iron strips placed at 2' apart horizontally and 1' interval vertically in 1:3 ratio.	100 Sft	100.00	19106.35	19,106.35
15	C-10/39	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaie flooring into panesl approximate siae (3'x3')	1 Rft	265.00	7.90	2,093.50
16	C-11/9(b)	Cement plaster 1:4 upto 20' height. b) 1/2" thick. (Internal)	100 Sft	3667.50	3941.65	144,560.01
18	C-13/1-5	Painting new surfces: Preparing surface and painting of doors & windows, any type (including edges)" ii) Each subsequent coat of paint (two coats).	100 Sft	290.50	1661.25	4,825.93
			100 Sft	581.00	2217.00	12,880.77

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
19	C-9/I-5	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	100 Sft	593.07	12,818.25	76,021.20
20	C-11/I-22	Priming coat of chalk under distemper.	100 Sft	3667.50	348.00	12,762.90
21	C-11/I-23	Distempering. (iii) 3 coats.	100 Sft	3667.50	1,665.90	61,096.88
22	C-10/3	Supplying and filling sand under floor; or plugging in wells	100 Cft	180.18	3,061.20	5,515.67
23	C-3/15	Filling, watering & ramming earth under floor (i) With surplus earth from foundation etc.	1000 Cft	3447.00	6,526.10	22,495.47
24	C-10/37	1-1/2" thick mosaic flooring consisting of 1/2" mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish (a) Using grey cement	100 Sft	546.00	28,238.40	154,181.66
25	C-25/41	P/F steel windows with openable glazed pannels, using Beam section for frame 1-1/2"x1" x5/8"-x1/8" Z section for leaves 3/4" x1"x3/4"x1/8", T section shashes 1"x1"x1/8" glass panes, Wooden screed for glazing etc. (a) fixed with wire gauge, 22 SWG & glass pane 5 mm thick.	1 Sft	216.00	1,393.10	300,909.60
26	C-25/30	Making and fixing steel grated door with 1/16" inches thick sheeting surrounding by angle iron 1"x1"x1/8" including angle iron frame 2"x2"x3/16" and flat iron 2"x1/8" with looking arrangement completed in all respect as shown in the drawings and specified.	1 Sft	186.50	2,331.35	434,796.78
27	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	575.52	6704.50	38,586.02

Total:- (Rs.) 2,868,554.98

Say:- (Rs.) 2,868,555.00

**QUANTITY SHEET****UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

Sub Head # G.I: Construction of Boundary Wall Around Pumping Station:

For 100 Rft

Item No.	Description	No	Measurements			Quantity
			L	B	D	
1	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and reamming lead upto one chain and lift ordinary soil 0' to 5.0 ft. Depth	1	100	2.50	2.25	562.5
2	Cement concrete brick or stone ballast 1.5" to 2" guage in foundation plinth Ratio (1:4:8)	1	100	2.50	0.375	93.75
3	Pacca brick work other than building upto 10 ft height in 1:5 cement sand mortor.	1	100	1.50	0.50	75.00
		1	100	1.125	0.50	56.25
		1	100	0.75	3.00	225.00
	for column	10	1.13	0.375	3	12.66
						<b>368.91</b>
4	P/L damp proof course with cement concrete 1:2:4 using cement sand and shingle including bitumen coating with 2 coats of bitumen 1.5" thick	1	100.00	0.75		75.00
		10	1.13	0.375		4.22
						<b>79.22</b>
5	Pacca brick work other than building upto 10 ft height in 1:4 cement sand mortor.	1	100	0.75	6.00	450.00
6	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:3	1	100		6	600.00
7	Cement plaster 1:4 upto 20' (6.00mm) height (b) 1" thick	1	100		6	600.00
8	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). On top of wall and columns. Ratio (1:2:4)	1	100	0.75	0.17	12.75
9	Providing & fixing fencing 2' height consisiting upon three row of steel boardbed wire and angle iron 2" x2"x1/4" post at 5' center to center grouted in PCC 1:2:4 top of wall	1	100			100.00
10	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:2:4)	1	12.75	0.88		11.22

**COST ESTIMATE****UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

Sub Head # G.I: Construction of Boundary Wall Around Pumping Station:

For 100 Rft						
Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	C-3/21	Excavation in foundation of bulidings, bridges and other structures including dagbelling, dressing, refiling around structures with excavated earth watering and reamming lead upto one chain and lift ordinary soil 0' to 5.0 ft. Depth	1000 Cft	562.50	13669.90	7689.32
2	C-7/7	Pacca brick work other than building up to 10 ft height in 1:5 cement sand mortor.	100 Cft	93.75	32951.50	30892.03
3	C-7/4-a	Pucca brick work in foundation and plinth in: (i) Cement sand mortar 1:5	100 Cft	368.91	31566.45	116450.61
4	C-6/36	P/L damp proof course with cement concrete (1½") using cement sand and shingle including bitumen coating with 2 coats of bitumen	100 Sft	79.22	12315.15	9755.91
5	C-7/1-5	Pacca brick work other than building up to 10 ft height in 1:4 cement sand mortor.	100 Cft	450.00	35380.80	159213.60
6	C-11/18	Cement pointing struck joints on walls, upto 20' height b) ratio 1:3	100 Sft	600.00	4075.20	24451.20
7	C-11/9	Cement plaster 1:4 upto 20' (6.00mm) height (b) 1/2" thick	100 Sft	600.00	3941.65	23649.90
8	C-6/1-5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). On top of wall and columns. Ratio (1:2:4)	100 Cft	12.75	43837.20	5589.24
9	C-25/49	Providing & fixing fencing 2' height consitting upon three row of steel board wire and angle iron 2" x2"x1/4" post at 5' center to center grouted in PCC 1:2:4 top of wall	100 Rft.	100.00	30085.00	30085.00
10	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	11.22	6704.50	752.24
					<b>Total:- (Rs.)</b>	<b>408529.05</b>
Rate per Rft						4085.29
Cost of Boundry wall			Rft	660.00		2696291.75
					<b>Say:- (Rs.)</b>	<b>2696292.00</b>



**QUANTITY SHEET****UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # G-II: Construction of Main Gate:**

S.No.	Detail of Item/Work	No.	Measurements			Quantity	
			L	B	H		
1	Excavation in foundation of bulidings, bridges and other structures including dagbelling, dressing, refiling around structures with excavated earth watering and reamming lead upto one chain and lift ordinary soil 0' to 5.0 ft. Depth	1	3.00	3.00	2.50	22.50	
2	Cement concrete brick or stone ballast 1-1/2" to 2" (40mm to 50 mm guage in foundation and plintf Ratio (1:4:8)	1	3.00	3.00	0.25	2.25	
3	Pacca brick work other than building upto 10 ft height in 1:5 cement sand mortor.	2	3.00	0.75	1.25	5.63	
		2	1.50	0.75	1.25	2.81	
		2	3.00	0.38	3.00	6.75	
		2	2.25	0.38	3.00	5.06	
						20.25	
4	P/L damp proof course with cement concrete 1:2:4 using cement sand and shingle including bitumen coating with 2 coats of bitumen 2" thick	2	3.00	0.38		2.25	
		2	2.25	0.38		1.69	
						3.94	
5	Pucca brick work in ground floor:- (i) Cement sand mortar 1:4	2	3.00	0.38	7.00	15.75	
		2	2.25	0.38	7.00	11.81	
						27.56	
6	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:2	2	3.00		7.00	42.00	
		2	2.25		7.00	31.50	
						73.50	
7	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete.  (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:-  Type C (nominal mix 1:2: 4)	1	3.00	3.00	0.67	6.03	
		2x4	1.88	1.125	0.17	1.44	
		1	0.75	0.75	14.75	8.30	
						15.77	
8	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust).  (b) deformed bars. # 6	5	3.25	16.25	1.5/2.204	11.06	
		7	3.25	22.75	1.5/2.204	15.48	
		4	13.75	55.00	1.5/2.204	37.43	
		# 2	13	3.17	41.21	0.17/2.204	3.18
						67.15	
9	Making and fixing steel grated doors complete with locking arrangement, angle iron frame 2"x2"x3/8" and 3/4" square walls 4" center to center.	1	16	6		96.00	
10	Preparing surface and painting guard bars , gates of iron bars priming coat	1	16	6		96	
	each subsequent coat	1	16	6		96	
11	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:4:8)	1	2.25	0.95		2.13	
	Ratio (1:2:4)	1	15.77	0.88		13.87	
						16.01	

**COST ESTIMATE****UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

Sub Head # G-II: Construction of Main Gate:

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-3/21	Excavation in foundation of bulidings, bridges and other structures including dagbelling, dressing, refiling around structures with excavated earth watering and reamming lead upto one chain and lift ordinary soil 0' to 5.0 ft. Depth	1000 Cft	22.50	13669.90	307.57
2	C-6/3	Cement concrete brick or stone ballast 1-1/2" to 2" (40mm to 50 mm guage in foundation and plinth Ratio (1:4:8)	100 Cft	2.25	34098.00	767.21
3	C-7/7	Pacca brick work other than building upto 10 ft height in 1:5 cement sand mortar.	100 Cft	20.25	32951.50	6,672.68
4	C-6/36	P/L damp proof course with cement concrete 1:2:4 using cement sand and shingle including bitumen coating with 2 coats of bitumen 2" thick	100 Sft	3.94	12315.15	484.91
5	C-7/5	Pucca brick work in ground floor:- (i) Cement sand mortar 1:4	100 Cft	27.56	35380.80	9,751.83
6	C-11/18	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:2	100 Sft	73.50	4305.60	3,164.62
7	C6-6-a-ii	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete.  (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Type C (nominal mix 1:2: 4)	1 Cft	15.77	538.30	8,486.34
8	C-6/12	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust  (b) deformed bars. 60 grade	100 Kg	67.15	35068.45	23,549.59
9	C-25/30	Making and fixing steel grated doors complete with locking arrangement, angle iron frame 2"x2"x3/8" and 3/4" square walls 4" center to center.	1 Sft	96.00	2,331.35	223,809.60
10	C-13/5	Preparing surface and painting guard bars , gates of iron bars priming coat each subsequent coat (Two Coats)	100 Sft 100 Sft	96.00 96.00	1063.80 1480.20	1,021.25 1,420.99
11	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	16.01	6704.50	1,073.09

Total:- (Rs.) 280,509.68

No. of Gate 1

280,509.68

Say:- (Rs.) 280,510.00

**QUANTITY SHEET**  
**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

**Sub Head H: Construction of Staff Quarter**

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
1	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and ramming lead upto one chain and lift (i) 0 ft. to 5.0 ft. depth.	1	197.75	3.00	2.25	1334.81
		1	38.87	2.25	2.25	<u>196.78</u>
						<b>1531.59</b>
2	Cement concrete brick or stone ballast 1 1/2" to 2" gauge in foundation and plinth Ratio (1:4:8)	1	197.75	3.00	0.38	222.47
		1	38.87	2.25	0.37	<u>32.36</u>
						<b>254.83</b>
3	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete. (a) (i) Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (3) Type C (nominal mix 1:2:4)	1	26.25	24.50	0.42	270.11
		1	11.87	6.50	0.33	25.46
		2	4.50	0.75	0.50	3.38
		1	4.00	0.75	0.50	1.50
		1	5.00	0.75	0.50	1.88
		2	3.50	0.75	0.50	2.63
		3	5.00	0.75	0.50	5.63
		2	3.00	0.75	0.50	2.25
		1	6.00	0.75	0.50	2.25
		1	17.00	2.00	0.17	<u>5.78</u>
						<b>320.85</b>
4	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust. (b) deformed bars.		320.85 x 5.5 /2.204			800.67
5	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.: (a) 4" dia cast iron down pipe.	2	11.00			22.00
6	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	2				2.00
7	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting	2				2.00
8	P/L damp proof course of cement concrete 1:2:4 (using cement, sand and shingle), including bitumen coating (b) With two coats of bitumen (i) 1.5" thick	1	197.00	0.75		147.75
		1	38.00	0.75		<u>28.50</u>
						<b>176.25</b>
9	Pucca brick work in foundation and plinth in:- (i) Cement sand mortar (1:5)	1	197.75	1.88	0.50	185.39
		1	197.37	1.50	0.50	148.03
		1	38.50	1.50	0.50	28.88
		1	197.38	1.13	0.50	111.03
		1	38.50	1.13	0.50	21.66
		1	197.00	0.75	5.50	812.63
		1	38.50	0.75	5.50	<u>158.81</u>
						<b>1466.41</b>
10	Pucca brick work in ground floor:- (i) Cement sand mortar (1:5)	1	197.00	0.75	11.00	1625.25
		1	38.00	0.75	7.00	<u>199.50</u>
						<b>1824.75</b>
11	Providing and laying sand under floor	2	11.00	12.00	0.33	87.12
		1	12.00	15.00	0.33	59.40
		1	7.00	12.00	0.33	27.72
		2	5.00	5.50	0.33	18.15
		1	24.75	9.75	0.33	79.63
		1	14.75	6.00	0.33	<u>29.21</u>
						<b>301.23</b>

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
12	Dry reamed brick or stone ballast 1.5" to 2"	2	11.00	12.00	0.33	87.12
		1	12.00	15.00	0.33	59.40
		1	7.00	12.00	0.33	27.72
		2	5.00	5.50	0.33	18.15
		1	24.75	9.75	0.33	79.63
		1	14.75	6.00	0.33	<u>29.21</u>
						<b>301.23</b>
13	1-1/2" thick mosaic flooring consisting of 1/2" mosaic toping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish (a) Using grey cement	2	11.00	12.00		264.00
		1	12.00	15.00		180.00
		1	7.00	12.00		84.00
		2	5.00	5.50		55.00
		1	24.75	9.75		241.31
		1	14.75	6.00		<u>88.50</u>
						<b>912.81</b>
14	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement (ii) 1/2" thick	4	11.00	0.50		22.00
		4	12.00	0.50		24.00
		2	12.00	0.50		12.00
		2	15.00	0.50		15.00
		2	12.00	0.50		12.00
		2	7.00	0.50		7.00
		2	24.75	0.50		24.75
		2	10.25	0.50		<u>10.25</u>
						<b>127.00</b>
15	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaic flooring into panels approximate slae (3'x3')					300.00
16	Cement plaster 1:4 upto 20' height. b) 1/2" thick.	2	27.00		11.00	594.00
		4	23.00		11.00	1012.00
		2	19.00		11.00	418.00
		4	9.25		11.00	407.00
		1	40.00		7.00	<u>280.00</u>
						<b>2711.00</b>
17	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:2					2711.00
18	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	1	24.75	22.75		563.06
		1	10.37	5.00		<u>51.85</u>
						<b>614.91</b>
19	Khuras on roof 2'x2'x6"	2				2.00
20	P/F steel windows with openable glazed pannels, using millad steel box sections 1-1/2"x1-1/2"x18 SWG glass panes, M.S channel 1/2"x1/2"x1/16" duly serenwd with leaves, & filled with rubber feld in between glass & M.S channel brass fitting, holdfast, duly painted	4	6.00	4.00		96.00
		2	2.00	2.00		<u>8.00</u>
						<b>104.00</b>
21	(a) fixed with wire gause, 24 SWG & glass pane 5 mm thick.					104.00
22	Providing and fixing 1 1/2" thick hollow flush door and window with commercial ply 3 ply on both faces deodar wood shutter frame 1 1/4" thick and partial wood braces at about 3" apart and deodar wood lipping 1 1/2" X3/8" fixed with MS chowkhat including chromium plated fittings etc. complete in all respects with out sliding bolt or lock	2	3.50	7.00		49.00
		1	5.00	7.00		35.00
		1	3.00	7.00		21.00
		2	2.50	7.00		<u>35.00</u>
						<b>140.00</b>

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
23	Painting new surfaces: Preparing surface and painting of doors & windows, any type (including edges)*. i) Priming coat	2 1 1 2 4 2	3.50 5.00 3.00 2.50 6.00 2.00	7.00 7.00 7.00 7.00 4.00 2.00	Sides 2.00 2.00 2.00 2.00 2.00 2.00	98.00 70.00 42.00 70.00 192.00 16.00 <b>488.00</b>
	ii) Each subsequent coat of paint (two coats).					488.00
24	Priming coat of chalk under distemper.	2 4 2 4 1	27.00 23.00 19.00 9.25 40.00		11.00 11.00 11.00 11.00 7.00	594.00 1012.00 418.00 407.00 280.00 <b>2711.00</b>
25	Distempering. (iii) 3 coats.					2711.00
26	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:2:4) Ratio (1:4:8)	1 1	320.85 254.83	0.88 0.95		282.35 241.50 <b>523.85</b>
	<b>PLUMBING AND SANITARY FITTINGS</b>					
1	P/F brass stop cock / bib cock. 1/2 " dia	5				5.00
2	P/F Floor trap of cast iron including concrete chamber alround and C.I grating. 4" x 3"	3				3.00
3	P/F G.I pipe line. 3/4" dia 1/2" dia	1 1	75.00 100.00			75.00 100.00
4	P/F plastic made low down cistern including bracket set etc complete. white	1				1.00
5	P/F chromium plated shower rose. 1/2" dia	1				1.00
6	P/F chromium plated or brass oxidised swan neck cock.	1				1.00
7	P/F angle iron brackets for sinks.	2				2.00
8	P/F stainless stlle sink with drain board including bracket set waste pipe and waste coupling	1				1.00
9	P/F chromium plated stop cock.	2				2.00
10	P/F cast iron man hole cover. 18" dia	1				1.00
11	P/F PVC Pipe. 4" dia 3" dia	1 1	10.00 20.00			10.00 20.00
12	P/F 1/2" dia connection check nut copper.	4				4.00
13	Providing and fixing wash hand basin	1				1.00
14	Providing and fixing pillar cock 1/2"	1				1.00
15	P/F white glazed earthen ware water closet	1				1.00
	<b>ELECTRIFICATION</b>					
1	Supply and erection of PVC pipe for recessed wiring including bends and specials etc. in wall or trenches (i)20mm dia	1	150.00			150.00
2	Supply and erection of single core PVC insulated copper conductor cables in prelaidd PVC pipes 3/0.029 " 7/0.029 "	1 1	1200.00 300.00			1200.00 300.00
3	Supply and erection of M.S sheet box of 16 16SWG 10 cm deep 8"X10" 7"X4" 4"X4"	1 2 5				1.00 2.00 5.00

S.No.	Detail of Item/Work	No.	Measurements			Quantity
			L	B	H	
4	Supply and erection of Iron /Aluminium clad 500 V main switch with kitkat fuses on angle iron board with 3 mm thick 15/20 amp	1				1.00
5	Supply and erection of Iron /Aluminium clad branch distribution board 250 volts on angle frame of suitable size with 3 mm sheet covering 3 way 15 amp per way	1				1.00
6	Supply and erection of 3/8 dia M.S fan hook	4				4.00
7	Supply and erection of bracket of M.S channel 75X40X6 mm section 2' long for 2 lights	2				2.00
8	Supply and erection of ceiling rose bakelite	8				8.00
9	Supply and erection of switches 5 amp piano type	25				25.00
10	Supply and erection of house service pipe	3				3.00
11	Supply and erection of 56" DIA fan (ASIA ,ROYAL ) with regulators and canopy complete in all respects	6				6.00
12	Supply and erection of energy meter including meter testing fee single phase 130amp 250 volts	1				1.00

## COST ESTIMATE

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY****Sub Head # H: Construction of Staff Quarter:**

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-3/21	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and ramming lead upto one chain and lift (i) 0 ft. to 5.0 ft. depth.	1000 Cft	1531.59	13669.90	20,936.71
2	C-6/I-3	Cement concrete brick or stone ballast 1 1/2" to 2" gauge in foundation and plinth Ratio (1:4:8)	100 Cft	254.83	28594.20	72,866.04
3	C-6/I-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shapge and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete. (a) (i) Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (3) Type C (nominal mix 1:2:4)	1 Cft	320.85	674.30	216,351.62
4	C-6/12	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust). (b) deformed bars. 60 grade	100 Kg	800.67	35068.45	280,782.56
5	C-9/1-20	Cast iron rain water down pipe fixed in position, excluding heads and shoes, but including painting and clamps, etc.: (a) 4" dia cast iron down pipe.	1 Rft	22.00	500.00	11,000.00
6	C-9/1-21	Rain water down pipe cast iron head fixed in place, including cost of clamp holdfast and painting.	1 Each	2.00	1258.20	2,516.40
7	C-9/1-22	Shoes, bends or offsets for cast iron rain water down pipe, including fixing and painting	1 Each	2.00	666.00	1,332.00
8	C-6/36	P/L damp proof course of cement concrete 1:2:4 (using cement, sand and shingle), including bitumen coating (b) With two coats of bitumen (i) 2" thick	100 Sft	176.25	12315.15	21,705.45
9	C-7/I-4	Pucca brick work in foundation and plinth in:- (i) Cement sand mortar (1:5)	100 Cft	1466.41	31566.45	462,894.57
10	C-7/I-5	Pucca brick work in ground floor:- (i) Cement sand mortar (1:5)	100 Cft	1824.75	34359.60	626,976.80
11	C-10/3	Supplying and filling sand under floor; or plugging in wells.	100 Cft	301.23	3,061.20	9,221.20
12	C-6/2	Dry reamed brick or stone ballast 1.5" to 2"	100 Cft	301.23	11008.80	33,161.60
13	C-10/22	1-1/2" thick mosaic flooring consisting of 1/2" mosaic toping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finish (a) Using grey cement	100 Sft	912.81	25985.25	237,196.61
14	C-10/1-37	Mosaic skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1/2" thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) Using grey cement (ii) 1/2" thick	100 Sft	127.00	28238.40	35,862.77
15	C-10/1-39	P/F glass strip 5 mm thick and 1-1/2" wide for dividing the mosaic flooring into panels approximate siae (3'x3')	1 Rft	300.00	7.90	2,370.00
16	C-11/1-9(b)	Cement plaster 1:4 upto 20' height. b) 1/2" thick.	100 Sft	2711.00	3941.65	106,858.13
17	C-11/1-18(b)	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:2	100 Sft	2711.00	4305.60	116,724.82
18	C-9/I-5	Single laying of tiles 9"x4-12"x1-1/2" laid over 4" earth and 1" mud plaster without bhoosa grouted with cement sand 1:3 on top or R.C.C. roof slab, provided with 34 lbs. Bitumen coating sand blinded.	100 Sft	614.91	12818.25	78,821.02

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
19	C-9/1-15	Khuras on roof 2'x2'x6"	1 Each	2.00	1036.65	2,073.30
20	C-25/41	P/F steel windows with openable glazed pannels, using milad steel box sections 1-1/2"x1-1/2"x18 SWG glass panes, M.S channel 1/2"x1/2"x1/16" duly serenwd with leaves, & filled with rubber feld in between glass & M.S channel brass fitting, holdfast, duly painted (a) fixed with wire gause, 22 SWG & glass pane 5 mm thick.	1 Sft	104.00	1393.10	144,882.40
21	C-12/50a	Providing and fixing 1 1/2" thick hollow flush door and window with commercial ply 3 ply on both faces deodar wood shutter frame 1 1/4" thick and partial wood braces at about 3" apart and deodar wood lipping 1 1/2" X3/8" fixed with MS chowkhat including chromium plated fittings etc. complete in all respects with out sliding bolt or lock. M.S Angle iron 1 1/2"x1.5"x1/4" welded with M.S Flate 2"x1/4"	1 Sft	140.00	2015.90	282,226.00
23	C-13/1-5	Painting new surfces: Preparing surface and painting of doors & windows, any type (including edges)". i) Priming coat ii) Each subsequent coat of paint (2 coats).	100 Sft 100 Sft	488.00 488.00	1661.25 2217.00	8,106.90 10,818.96
24	C-11/I-22	Priming coat of chalk under distemper.	100 Sft	2711.00	348.00	9,434.28
25	1-11/I-23	Distempering. (iii) 3 coats.	100 Sft	2711.00	1665.90	45,162.55
26	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	523.85	6704.50	35,121.51
<b>PLUMBING AND SANITARY FITTINGS</b>						
1	C 19/45a	P/F brass stop cock / bib cock. 1/2" dia	1 each	5.00	968.00	4,840.00
2	C 19/34ii	P/F Floor trap of cast iron including concrete chamber alround and C.I grating. 4" x 3"	1 each	3.00	1128.45	3,385.35
3	C 23/23	P/F G.I pipe line BSS 1387-1967 heavy quality 3/4" dia 1/2" dia	1 Rft 1 Rft	75.00 100.00	355.35 278.75	26,651.25 27,875.00
4	C 19/13	P/F plastic made low down cistern including bracket set etc complete.	1 each	1.00	4550.55	4,550.55
5	C 19/29	P/F chromium plated shower rose. 1/2" dia	1 each	1.00	1078.40	1,078.40
6	C 19/32	P/F chromium plated or brass oxidised swan neck cock.	1 each	1.00	730.40	730.40
7	C 19/R6	P/F angle iron brackets for sinks.	1 each	2.00	513.60	1,027.20
8	C 19/08	P/F stainless stlle sink with drain board including bracket set waste pipe and waste coupling	1 each	1.00	11750.65	11,750.65
9	C 19/25	P/F chromium plated stop cock.	1 each	2.00	1390.40	2,780.80
10	C19/40	P/F cast iron man hole cover. 18" dia	1 each	1.00	2265.60	2,265.60
11	C-23/27	P/F PVC Pipe. 4" dia 3" dia	1 Rft 1 Rft	10.00 20.00	548.65 365.95	5,486.50 7,319.00
12	C 19/R7	P/F 1/2" dia connection check nut copper.	1 each	4.00	552.25	2,209.00
13	C-19/7	Providing and fixing wash hand basin 22"x16" with pedestal.	1 each	1.00	9573.90	9,573.90
14	C-19/24	Providing and fixing piller cock 1/2"	1 each	1.00	2710.40	2,710.40
15	C-19/4	P/F white glazed earthen ware water closet	1 each	1.00	3609.85	3,609.85
<b>ELECTRIFICATION</b>						
1	C 24/3	Supply and erection of PVC pipe for recessed wiring including bends and specials etc. in wall or trenches 20mm dia	1 Rft	150.00	104.75	15,712.50
2	C 24/10	Supply and erection of single core PVC insulated copper conductor cables in prelaidd PVC pipes 3/0.029 " 7/0.029 "	1 Rft 1 Rft	1200.00 300.00	32.00 55.70	38,400.00 16,710.00



S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
3	C 24/17	Supply and erection of M.S sheet box of 16 16SWG 10 cm deep 8"X10" 7"X4" 4"X4"	1 each 1 each 1 each	1.00 2.00 5.00	898.35 479.55 348.70	898.35 959.10 1,743.50
4	C 24/21	Supply and erection of Iron /Aluminium clad 500 V main switch with kitkat fuses on angle iron board with 3 mm thick 15/20 amp	1 each	1.00	3873.45	3,873.45
5	C 24/23	Supply and erection of Iron /Aluminium clad branch distribution board 250 volts on angle frame of suitable size with 3 mm sheet covering 3 way 15 amp per way	1 each	1.00	1763.60	1,763.60
6	C 24/52	Supply and erection of 3/8 dia M.S fan hook	1 each	4.00	88.95	355.80
7	C 24/54	Supply and erection of bracket of M.S channel 75X40X6 mm section 2' long for 2 lights	1 each	2.00	1332.65	2,665.30
8	C 24/33	Supply and erection of ceiling rose bakelite	1 each	8.00	90.35	722.80
9	C 24/34	Supply and erection of switches 5 amp piano type	1 each	25.00	97.00	2,425.00
10	C 24/58	Supply and erection of house service pipe	1 Rft	3.00	819.15	2,457.45
11	N/S	Supply and erection of 56" DIA fan with regulators and canopy complete in all respects	1 each	6.00	11500.00	69,000.00
12	C 24/80	Supply and erection of energy meter including meter testing fee single phase130amp 250 volts	1 each	1.00	5262.00	5,262.00
					<b>Total:- (Rs.)</b>	<b>3,156,196.88</b>
<b>For 2 quarters</b>			3,156,196.88	x	2	6,312,393.76
					<b>Say:- (Rs.)</b>	<b>6,312,394.00</b>

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT**  
**(WWTP) GOJRA CITY**

**Sub Head # I: Providing & Installation of Pumping Machinery**

S #	Description	Qty	Unit	Rate	Cost
1	Providing, Installing, Testing and commissioning of non clogging Vertical sewage pumps cardon shaft vertical pumps with Cast Iron impeller, shaft, with 75ft head, gross efficiency not less than 72% coupled with suitable electric vertical motor 3 phase, 400 volts, 50 Hz, insulation class F, voltage tolerance up to (+/-) 5%, IP-55, cast iron casing with integral hand hole, speed should not be excess then 1000 RPM for permanent installation in Dry well, electrical cable upto 100 ft., control cable upto 100 ft, alongwith motor control unit (consisting of metallic box, circuit breaker, magnetic contactor, on/off switch, contorl fuse, control wire, under / over voltage relay, high temperature protection, electronic over current relay, indication lamps, ampere meter, volt meter, hour run meter, auto star delta starter, dry running protection and automatic operation with level reuglators, phase reversal protection with phase projector an each phase and indication lamps cost also included to connect with the pump with already fixed suction & delivery pipe lines, using any C.I special, M.S pipe dressing coupling joint in both ends.				
	8 cusec	3	Each	19,000,000.00	57,000,000.00
2	Design and construction of pump foundation and making other modification in the existing structure for installation of equipment complete.				
	8 cusec	3	Each	120,000.00	360,000.00
				<b>Total:</b>	<b>57,360,000.00</b>
				<b>Say:</b>	<b>57,360,000.00</b>

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT**  
**(WWTP) GOJRA CITY**

**Sub Head # J: Supply and Installation of 400 KVA Transformer.**

Sr.#	Description	Unit	Qty.	Rate	Amount
1	Supply, insatllation, commissioning and testing of oil cooled type, Step down Power Transformer of specified rating, 11/0.415 kV, i/c the cost of lifting hooks, thermometers, LT & HT bushing 5-steps, tap changer, imported double float buchholz relay, 2 earthing terminals, roller wheels, connecting terminals for cables M.S box on transformer in order to cover complete L.T side, all necessary materials required for connections on H.T & L.T side, rated voltage 11000/415/240 V impedance 6.25% or as specified by WAPDA/IEC system earth: Delta / Star, neutral solidly earthed, i/c Wapda testing charges, complete in all respects made of PEL, Siemens, as approved and directed by the Engineer Incharge 400 KVA				3,821,528.40

Total:-

**3,821,528.40**

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**Sub Head # K: Supply and Installation of 200 KVA Generator.**

Sr.#	Description	Unit	Qty.	Rate	Amount
1	Supply of 200 KVA 380/415v 3-Phase 4 wire diesel generating set complete with braker panel, exhuasut silencer and deep sea control panel complete with all necessary accessories with sound and weather proof conopy.	Each	1	8,400,000.00	8,400,000.00
	ATS panel with MOR (TP)	Each	1	2,200,000.00	2,200,000.00
	(iv) Transportation from Lahore to Gojra i/c loading and unloading etc.	L.S			38,000.00

Total:-

**10,638,000.00**

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**Sub Head # L: LT Change Over Panel with PFI**

S #	Description		Qty	Unit	Rate	Cost
1	600A 440VAC MANUAL CHANGEOVER PANEL WITH MCCBs 01 Set. 14 SVVG MS sheet fabricated, free standing/floor mounting, indoor type, IP-44, front access as per required dimensions to compensate the given components, insulation class of 600 Volts, connections from top or bottom as per site requirement, suitable for 440 VAC, 3 phase 4 wire, 50Hz TPN&E system, complete with 1250A TPN&E Electrolytic copper bus bar, powder painted of color RAL 7032 baked at 200 deg cg complete in all respect as per given specification/requirement equipped as under:					4506200
1	MCCB, 3-Pole, 1250A, Icu/Ics 100/50KA, Hyundai/Eqv.	Nos.	2			
2	Mechanical Interlock System 2 in 1 Changeover	Nos.	1			
3	Phase Indication Lights 25mm (Red, Yellow, Blue) Telemecanique/Eqv.	Nos.	6			
4	Digital Power Meter 96x96 Tense/Eqv.	Nos.	1			
5	Current Transformer 1200/5A, Tense/Eqv.	Nos.	3			
6	MCB, 1-Pole, 6A, Hyundai/Eqv.	Nos.	3			
7	SPD, 4-Pole, Europe	Nos.	1			
8	MCB, 4-Pole, 63A, Hyundai/Eqv.	Nos.	1			
<b>B</b>	<b>Outgoing Section</b>					
1	MCCB, 3-Pole, 500A, Icu/Ics 45/45KA, Hyundai/Eqv. (for ASD 120HP)	Nos.	3			
2	MCCB, 3-Pole, 125A, Icu/Ics 20/20KA, Hyundai/Eqv. (for ASD 60HP)	Nos.	2			
3	MCCB, 3-Pole, 250A, Icu/Ics 45/45KA, Hyundai/Eqv. (for ASD 100HP) Only Space	Nos.	1			
<b>B</b>	<b>Auto PFI Section 350Kvar</b>					
1	Power Capacitor 50Kvar, 440VAC Electronicon Germany	Nos.	5			
2	Power Capacitor 25Kvar, 440VAC Electronicon Germany	Nos.	3			
3	Power Capacitor 12.5Kvar, 440VAC Electronicon Germany	Nos.	2			
4	MCCB, 100A, 3-Pole, 16KA, Hyundai/Eqv.	Nos.	5			
5	MCCB, 50A, 3-Pole, 16KA, Hyundai/Eqv.	Nos.	3			
6	MCCB, 30A, 3-Pole, 16KA, Hyundai/Eqv.	Nos.	2			
8	Magnetic Contactor 3-Pole, AC3~105A, Hyundai/Eqv.	Nos.	5			
9	Magnetic Contactor 3-Pole, 50A, Hyundai/Eqv.	Nos.	3			
10	Magnetic Contactor 3-Pole, 32A, Hyundai/Eqv.	Nos.	2			
12	Power Factor Controller 12-Step, Entes/Tense/Eqv.	Nos.	1			
13	On-Off Selector Switch Camsco/Eqv.	Nos.	1			
14	Auto-Off-Manual Selector Switch Camsco/Eqv.	Nos.	12			
15	ON Push Button Telemecanique/Eqv.	Nos.	12			
16	On Indication Lights Green Telemecanique/Eqv.	Nos.	12			
17	Current Transformer 1200/5A, Tense	Nos.	1			
18	MCB, 6A, 1-Pole, Hyundai/Eqv.	Nos.	3			
<b>C</b>	<b>Housing Of Panel Box</b>					
1	Panel Size in Millimeters: (2400 W x 2200 H x 700 D)	No.	1			
	Using of GI Sheet 14 Gauge					
	With Powder Coating Paint RAL-7032					
	With Also Included Protection Sheet					
	Internal Plates Are Blue Powder Coating Paint					
	With Clear In All Aspects					

D	Copper Busbar 99.9% Purity					
1	Using of copper bus bar R,Y,B, Earth & Neutral	No.	1			
	With Clear In All Aspects					
E	Power and Control Wiring					
1	Using of copper cable power and control wiring	No.	1			
	With Clear in all Aspects					
F	Making of Copper Busbar					
1	Using of PLC Operated Machnies & Mechanical Tools	No.	1			
	Copper Making Bending & Holing with clear in all aspect					
Total:						4,506,200.00

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT  
PLANT (WWTP) GOJRA CITY**

**Sub Head # M: External & Internal electrification and cabling work**

S #	Ref. CSR P/Item	Description	Qty	Unit	Rate	Cost
1		Providing and installation of electric cable copper conductor, PVC/PVC insulation				
	C-24/12	Transfer to metering Pannel. single core 91/0.103 (500mm)	72	Meter	22287.05	1,604,667.60
	C-24/12	Metering panel & Generator to LT Pannel single core 91/0.103	72	Meter	22287.05	1,604,667.60
	C-24/12	LT panel to sub pannel ( MCB) single core 19/0.083	234	Meter	3126.50	731,601.00
		P/ F M.S cable tray 16 swg. Perforated 6" x 4".	380	Kg	550.00	209,000.00
		Providing solidering of thimble copper made heavy duty with required size of cable				
		i. 91/0.103	30	Each	945.00	28,350.00
		ii. 19/0.083	46	Each	585.00	26,910.00
		Earthing of electric motors, pannels	3	Each	210513.00	631,539.00
2	C-24/10	Supply and erection single core PVC insulated copper conductor cable 250/440 volts grad cable.				
		7/0.036	500	Meter	230.75	115,375.00
		3/0.029	711	Meter	104.9	74,583.90
3	C-24/34	Supply and erection of Switches 5 Amp piano Type.	60	Each	97.00	5,820.00
4	C-24/37	Supply and Erection of 3 pin socket	20	Each	118.45	2,369.00
5	C-24/33	Supply and erection of ceiling rose	15	Each	90.35	1,355.25
6	C-24/80	Supply and erection of holder for energy meter.	28	Each	5235.60	146,596.80
7	C-24/16	supply and erection of teak wood board.				
		i) 7"x4"	3	Each	188.50	565.50
		ii) 9"x4"	6	Each	204.10	1,224.60
	N.S	iii) 4"x4"	15	Each	110.20	1,653.00
8		Supply and fitting of LED using complete with choke set.	4	Each	25115.00	100,460.00
		i) 60 watt lamp				
9	C-24/71	Supplying, installation testing and commissioning of Octagonal shape electric street light pole, made of hot dipped 4.5 mm thick (7 SWG) galvanized steel, tapered from 225 mm at bottom to 100 mm at top, with 1500 mm x 60 mm x 4mm thick dia. arm for luminaire installation, duly G.I.welded with 470x470x20 mm base plate with the help of 4 no triangular stiffeners 100x350x20 mm of GI sheet, with built in junction box with shutter, i/c the cost of nuts & J-rag bolts, duly fixed in prelaid concrete foundation, foundation will be paid additionally as approved and directed by the Engineer In charge.				
		a) Single Arm				
		(i) 10 mtr height	6	Each	150866.95	905,201.70
	C-24/72	Supplying, installation and commissioning of LED Cobra-head Luminaries of specified wattage and lumens conforming to IP 66 & IK 08 or above Philips/Osram/Thorn or equivalent with corrosion resistant die casted Aluminum housing, silicon gasket in special groove, UV stable & scratch resistant synthetic materials, thermally hardened glass complete with LED Chip (Philips Lumiled / Cree / Nichia / Osram make or equivalent), programmable LED driver (Harvard/TCI/Lumotech/Philips/VOSSLOH Schwabe/Lightech make or equivalent), minimum 10kV surge protection rating i/c the cost of all accessories / components required for proper operation, fully flexible for future upgradation and easy replacements for maintenance purposes, bucket elevator charges as approved and directed by the Engineer Incharge.				
		a) 140 Lm/Watt				
		(iii) 60 Watt with 8400 lumens	6	Each	77,219.15	463,314.90
		c) 120 Lm/Watt				
		(i) 30 Watt with 3600 lumens	10	Each	51,620.90	516,209.00

10	C-24/3	PVC Pipe 20 mm	700	Rft	104.75	73,325.00
		25 mm	690	Rft	125.50	86,595.00
12	N.S	Providing and fixing Copper winded Exhaust fan with louver and shutter made of Pak/Younas/G.F.C. i/c the cost of necessary cable and hardware for connection from ceiling rose complete as approved and directed by Engineer Incharge.				
		(b) Steel body	4	Each	4,810.85	19,243.40
		(ii) 18" sweep				
13	N.S	Supply and erection of 56" DIA fan with regulators and canopy complete in all respects	9	Each	11500	103,500.00
14	N.S	Providing and installation of distribution box of M.S Sheet with 6 No. circuit breaker of 10 amp & earth leakage circuit breaker.	1	Each	22150	22,150.00
15	N.S	Provision for payment of FESCO Connection as per demand note	1	Each	1,800,000.00	1,800,000.00
<b>Total:</b>						<b>9,276,277.25</b>
<b>Say:</b>						<b>9,276,277.00</b>



**DETAILED QUANTITY SEWER  
FOR THE SCHEME  
PROVIDING AND LAYING FORCEMAIN FROM DISPOSAL STATION TO WWTP GOJRA CITY**

Part-A

S #	Description	No.	Measurements			Quantity
			L	B	H	
1	Dismantling and removing road pavement etc, including screening and stacking of by products upto chain (30m) lead. 630 mm dia		480.00	3.50	2.00	3,360.00
2	Earth work excavation in open cutting for sewers and manholes as shown in draw -ings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock. 630 mm dia		14,993.00	3.50	5.50	288,615.25
3	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-100) working pressure pipe, Beta/ Dadex/ Popular/ IIL or equivalent including the cost of specials, in trenches, as approved & directed by the engineer in charge, complete in all respects. (PN-10) 630 mm dia PN-10 630 mm dia PN-8		7,400.00 7,593.00			7,400.00 7,593.00
4	(i) Rehandling of earth work. (a) Lead upto a single throw of Kassi, pharaoh or shovel.		230,892.20	-	-	230,892.20
	(ii) Compaction of earth work. (a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.		230,892.20	-	-	230,892.20
5	Supplying and filling sand under floor; or plugging in wells. 630 mm dia		14,993.00	3.50	0.50	26,237.75
6	Providing and fixing heavy duty Pressure Relief Valve of specified diameter and material for pressure rating PN-16 made of Crane (USA), Hattersly (UK) or Scon (Pakistan) integral device with a pressure setting, a restrictor and a sensor all in the one body, i/c the cost of all accessories flanges, nut/bolt and gasket where required complete in all respect as approved and directed by the Engineer Incharge 2-1/2" dia		4.00			4.00
7	Providing and fixing heavy duty Gate valve of specified diameter and material for pressure rating PN-16 made of Crane (USA), Hattersly (UK) or Scon (Pakistan) i/c the cost of all accessories flanges, nut/bolt and gasket where required complete in all respect as approved and directed by the engineer in charge (Flange ended ductile iron valve) 630 mm		2.00			2.00
8	Providing and fixing Non-Return Valve Flange with S.S Plate and fitting Complete in all respect 630 mm dia		3.00			3.00
9	Provision for Crossing of Drain Pipe will be laid along with parapit and concrete covering will be provided as under P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete.  (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Ratio 1:2:4 Core Wall Deduction	1 1	44.00 44.00	3.50 .14x2.08x2.08x0.25	3.50	539.00 149.43 <b>389.57</b>

S #	Description	No.	Measurements			Quantity
			L	B	H	
9b	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust). (b) deformed bars.		1x194.78x3			1168.70
10	Provision for crossing of railway					1.00
11	P.C.C 1:2:4 for Trust Block		400.00			400.00
12	Construction of Air valve / Sluice valve chamber		5.00			5.00
13	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:2.4)	1	789.57	0.88		694.82

**DETAILED ESTIMATE**  
**FOR THE SCHEME**  
**PROVIDING AND LAYING FORCEMAIN FROM DISPOSAL STATION TO WWTP GOJRA CITY**

Part-A (Govt. Notified Rates) January 2023 to July 2023

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	C-4/46	(i) Dismantling and removing road pavement etc, including screening and stacking of by products upto chain (30m) lead.	100 Cft.	3,360.00	3,468.00	116,524.80
2	C-3/42	Earth work excavation in open cutting for sewers and manholes as shown in drawings including shuttering and timbering, dressing to correct sections and dimensions according to templates and levels, and removing surface water, in all types of soil except shingle gravel and rock.				
		(i) 0 ft to 7 ft. Depth	1000 Cft.	288,615.25	15,688.05	4,527,810.47
3	C-23/43	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-100) working pressure pipe, Beta/ Dadex/ Popular/ IIL or equivalent including the cost of specials, in trenches, as approved & directed by the engineer incharge, complete in all respects.	1 Rft	7,400.00	19,811.75	146,606,950.00
		630 mm dia (PN-10)	1 Rft	7,593.00	16,116.15	122,369,926.95
		630 mm dia (PN-8)				
4	C-3/13	(i) Rehandling of earth work.				
		(a) Lead upto a single throw of Kassi, phaorah or shovel or shovel.	1000 Cft.	230,892.20	3,247.20	749,753.15
	C-3/24a,c	(ii) Compaction of earth work.				
		(a) Mixing, moistening earth to optimum moisture content in layers for compaction etc. complete.	1000 Cft.	230,892.20	1,308.40	302,099.35
5	C-10/3	Supplying and filling sand under floor; or plugging in wells.				
			100 Cft.	26,237.75	3,061.20	803,190.00
6	C-23/56	Providing and fixing heavy duty Pressure Relief Valve of specified diameter and material for pressure rating PN-16 made of Crane (USA), Hatersly (UK) or Scon (Pakistan) integral device with a pressure setting, a restrictor and a sensor all in the one body, i/c the cost of all accessories flanges,nut/bolt and gasket where required complete in all respect as approved and directed by the Engineer Incharge <b>2-1/2" dia</b>	Per Job	4.00	70,233.60	280,934.40
7	C-23/52 xx	Providing and fixing heavy duty Gate valve of specified diameter and material for pressure rating PN-16 mde of Crane (USA), Hatersly (UK) or Scon (Pakistan) i/c the cost of all accessories flanges,nut/bolt and gasket where required complete in all respect as approved and directed by the engineer incharge (Flange ended ductile iron valve) <b>630 mm</b>	Per Job	2.00	1,533,384.00	3,066,768.00
8	N.S	Providing and fixing Non-Return Valve Flange with S.S Plate and fitting Complete in all respect <b>630 mm dia</b>	Per Job	3.00	485,525.00	1,456,575.00
9		Provision for Crossing of Drain				
		Pipe will be laid along with parapit and concrete covering will be provided as under				
9a	C6-1-6	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete.				
		(a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Ratio 1:1.5:3	P.Cft	389.57	597.40	232,726.81

S#	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
9b	C-6/12	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust). (b) deformed bars. 60 grade	100 Kg	1168.70	35,068.45	409,844.43
10		Provision for Crossing of Railway	Per Job	1.00	7,350,000.00	7,350,000.00
11	C-6/5	Cement concrete plain including, placing, compacting, finishing, and curing complete (including screening and washing of stone aggregate. (II) P.C.C. 1:2:4	100 Cft.	400.00	43,837.20	175,348.80
12	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	694.82	6,704.50	46,584.09
13	N.S	Construction of Air valve / Sluice valve chamber	100 Cft.	5.00	74,135.00	3,706.75
14	N.S	Providing and fixing M.S header 24" 4ft long one end blind and other end to be fixed with HDPE Pipe including cost of welding of M.S pipe 12" dia for connection of delivery pipes.	Each	1.00	284,434.00	284,434.00
<b>Total:- (B)</b>					<b>Rs.</b>	<b>288,783,177.01</b>
<b>Say:-</b>					<b>Rs.</b>	<b>288.78</b>
						<b>Million</b>

**DETAILED ESTIMATE**  
**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP)**  
**GOJRA CITY**

**RATE ANALYSIS FOR SUPPLYING, LAYING, CUTTING, JOINTING, TESTING AND DISINFECTING M.S PIPE WITH FLANGED JOINTS COATED WITH BITUMEN 24" DIA AND 1/4" THICK.**

S. No.	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	N.S	Providing of M.S pipe 24" dia, 3/8" thick (Avg. 44.31 kg/Rft.).	1 Rft.	10	24375	243,750.00
2	N.S	Providing of M.S Flange 24" dia, 3/4" thick i/c welding with pipe.	1 Each.	2	25595	51,190.00
3	N.S	Nut Bolts 5/8"x3" special quality i/c gaskets.	1 Each	24	150	3,600.00
4	N.S	Rubber Sheet join / gasket	1 Each	2	1100	2,200.00
5	N.S	Carriage of flanged pipe to site	1 Rft.	10	500	5,000.00
6	N.S	Two coat of epoxy paint on outer side complete. 1x3.142 (24.375/12) x 10 4 = 69.47 Sft x 2 = 138.94	1 Sft.	138.94	96	13,338.24
7	N.S	Laying and jointing/welding of pipe at site complete in all respects.	1 Rft.	10	500	5,000.00
<b>Total:-</b>					<b>Rs.</b>	<b>324,078.24</b>
Add 20% Contractor's Profit + overhead charges.					Rs.	64,815.65
<b>Grand Total:-</b>					<b>Rs.</b>	<b>388,893.89</b>
Rate per Rft. = 124770.79/10 = Rs. 12477.08					<b>Say:-</b>	<b>Rs. 38,889.00</b>
Cost of pipe 24" dia			6	38889.00		233,334.00
M.S pipe 12" dia 1ft long (4x1)			4	12775.00		51,100.00
						<b>284,434.00</b>

**Restoration of Roads (Forcemain)**

S.No.	Detail of Item/Work	No	Measurements			Quantity
			L	B	H	
1	2		3	4	5	6
1	Supplying and filling sand under floor; or plugging in wells. 30" dia forcemain	2.00	480.00	3.50	2.00	3,360.00
2	Re-Laying of Sub Base Course by using old material (received through dismantling of road crust, compacted up to 100% modified AASHO dry density complete in all respect. (Labour Rate only)18/3a-II 30" dia forcemain		480.00	3.50	1.50	2,520.00
3	Providing and laying of road edging of 3" wide and 9" deep brick on end complete in all respect. 18/5		480.00			960.00
4	Providing & Laying (Water Bound macadam) Base Course of crushed stone aggregate form Kirana quarry of required thickness of approved quality and grade, and supply and spreading of stone screening , including placing, mixing, spreading and compaction of base course material to required depth, camber and grade to achieve 100% maximum modified AASHO dry density, including carriage of all materials to site of work. complete in all respect. 18/4a		480.00	3.50	0.67	1,125.60
5	Providing and Laying bitumenious priming coat, using 10 Lbs kerosin oil and 10 lbs binder per 100 Sft or 0.5 Kg Kerosene and 0.5 Kg binder per square metre.		480.00	3.50		1,680.00
6	Providing ana laying Plant Premixed bitumenious carpt i/c compaction and finishing to required grade camber and density with 4.5 % bitumen 2.00" thick. (AWC)		480.00	3.50		1,680.00

**Restoration of Roads (Forcemain)**

Sr. No:	Description of items		Quantity	Rate	Unit	Amount
1	Providing and laying sand under and around the sewer pipe, including leveling, manual compaction, complete in all respect.		3360.00	3,061.20	P.% Cft	102,856
2	Re-Laying of Sub Base Course by using old material (received through dismantalling of road crust, compacted up to 100% modified AASHO dry density complete in all respect. (Labour Rate only)18/3a-II		2520.00	6,815.25	P.% Cft	171,744
3	Providing and laying of road edging of 3" wide and 9" deep brick on end complete in all respect. 18/5		960.00	57.40	P.Rft	55,104
4	Providing & Laying (Water Bound macadam) Base Course of crushed stone aggregate form Kirana quarry of required thickness of approved quality and grade, and supply and spreading of stone screening , including placing, mixing, spreading and compaction of base course material to required depth, camber and grade to achieve 100% maximum modified AASHO dry density, including carriage of all materials to site of work. complete in all respect. 18/4a		1125.60	28,887.34	P.% Cft	325,156
5	Providing and Laying bitumenious priming coat, using 10 Lbs kerosin oil and 10 lbs binder per 100 Sft or 0.5 Kg Kerosene and 0.5 Kg binder per square metre.C-18/6		1680.00	2,101.05	P.% Sft	35,298
6	Providing ana laying Plant Premixed bitumenious carpt i/c compaction and finishing to required grade camber and density with 4.5 % bitumen 2" thick. (AWC)		1680.00	16,700.87	P.% Sft	280,575

**Total 970,733.00****0.97**

## DETAILED QUANTITIES

RATE ANALYSIS FOR CONSTRUCTION OF AIR / SLUICE VALVE CHAMBER

Sr.No.	C.S.R.	Description	No.	L	B	H	Quantity
1	C-3/21,b	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain and lift upto 5 ft. b.in ordinary soil.	1	7.5	7.5	7.5	<b>421.88</b>
2	C-6/3-b	Cement concrete brick or ballast 1 1/2" to 2" gauge in foundation and plinth Ratio (1:4:8)	1	7.5	7.5	0.50	<b>28.13</b>
3	C-6/5	P.C.C. (1:2:4)	1	4.0	4.0	0.25	<b>4.00</b>
4	C-7/7,i	Pacca brick work other than building upto 10 ft height )1:3) cement sand mortor.	2	6.25	1.125	6.00	84.38
			2	4	1.125	6.00	<u>54.00</u>
							<b>138.38</b>
5	C-11/8-b	Cement plaster 1/2" thick (1:3) thick.	4	6.3		6.00	150.00
			4	4.0		6.00	96.00
							<b>246.00</b>
6	C-6/6-a-1	R.C.C. Slab (1:2:4)	1	6.25	6.25	0.67	26.17
		Deduction	1	3.14x1.83x1.83/4		0.67	<u>1.76</u>
						Net	<b>24.41</b>
7	C-6/9,b	Fabrication of mild steel reinforcement of cement concrete inclduing cutting, bending, laying in position, making joints and fastenings, including cost of binding reinfrocmeent (also includes removal of rust form bars.  b) Deformed bars (Grade-60)	1	24.41x6.75/2.204			<b>74.76</b>
8	Rate analysis	Providing/fixing RPC manhole cover with cover with tee shaped frame 22" l/d (frame atleast 50 kg) as per standard drg. & specifications.	1				<b>1.00</b>



## DETAILED COST

**RATE ANALYSIS FOR CONSTRUCTION OF AIR / SLUICE VALVE CHAMBER**

Sr.No.	C.S.R.	Description	Unit	Quantity	Rate	Amount
1	C-3/21,b	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling around structure with excavated earth, watering and ramming lead upto one chain and lift upto 5 ft. b.in ordinary soil.	1000 Cft	269.50	13669.90	3,684.04
2	C-6/3-b	Cement concrete brick or ballast 1 1/2" to 2" gauge in foundation and plinth Ratio (1:4:8)	100 Cft	24.50	28594.20	7,005.58
3	C-6/5	P.C.C. (1:2:4)	100 Cft	4	43837.20	1,753.49
4	C-7/7,i	Pacca brick work other than building upto 10 ft height )1:3) cement sand mortor.	100 Cft	68.53	35504.50	24,331.23
5	C-11/8-b	Cement plaster 1/2" thick (1:3) thick.	100 Sft	72	4132.80	2,975.62
6	C-6/6-a-1	R.C.C. Slab (1:2:4)	1 Cft.	13.28	674.30	8,954.70
7	C-6/12,b	Fabrication of mild steel reinforcement of cement concrete inclduing cutting, bending, laying in position, making joints and fastenings, including cost of binding reinfrocmeent (also includes removal of rust form bars. b) Deformed bars (Grade-60)	100 Kg	39.46	35068.45	13,838.01
8	Rate analysis	Providing/fixing RPC manhole cover with cover with tee shaped frame 22" l/d (frame atleast 50 kg) as per standard drg. & specifications.	1 Each	1	11592.00	11,592.00

Total:-Rs. **74,134.67**Say: Rs: **74,135.00**

**RATE ANALYSIS PROVIDING & FIXING OF REINFORCED PLASTIC COMPOSITE (RPC) MANHOLE COVERS**  
**24" I/D WITH RPC FRAME**

[illegible]

**RATE ANALYSIS PROVIDING & FIXING OF REINFORCED PLASTIC COMPOSITE (RPC)**  
**MANHOLE COVERS 22" I/D WITH RPC FRAME**

- 4 RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (22" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).

100 No. @ Rs. 9660.00 Each Rs. 966,000 /-

	Total:- Rs.	966,000 /-
Add 20 % Contract profit & OHC	Rs.	193,200 /-
	<b>Total:- Rs.</b>	<b>1,159,200 /-</b>
Rate Per Number	<b>Say Rs.</b>	<b>11,592 /-</b>

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT****PLANT (WWTP) GOJRA CITY****Rate Analysis for Base Course**

Sr. No.	Description	Unit	Quantity	Rate	Amount (Rs.)
<b>A</b>	a) Providing and laying base course of crushed stone aggregate of approved quality and grade, and supply and spreading of stone screening, including placing, mixing, spreading and compaction of base course material to required depth, camber and grade to achieve 100% maximum modified AASHO dry density, including carriage of all materials to site of work except gravel and aggregate. (C-18/4)	100 Cft	1	16,973.65	16,973.65
<b>B</b>	<b><u>Carraige</u></b> Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Chapter No - 1 / Item no - 1				
	1st Km	100 Cft	1	334.80	334.80
	2nd Km	100 Cft	1	160.30	160.30
	3rd Km	100 Cft	1	126.40	126.40
	4th Km	100 Cft	1	90.55	90.55
	5th Km	100 Cft	1	84.65	84.65
	6th Km	100 Cft	1	83.30	83.30
	7th Km	100 Cft	1	77.85	77.85
	8th Km	100 Cft	1	77.05	77.05
	9th Km	100 Cft	1	72.55	72.55
	10th Km	100 Cft	1	68.20	68.20
	10th Km to 95th Km / 103 - 10 = 93 Km	100 Cft	93	59.45	5,528.85
					<b>23,678.15</b>
	Add 22% Loose Factor				5,209.19
<b>Total Cost of 100 Cft</b>					<b>28,887.34</b>

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER  
TREATMENT PLANT (WWTP) GOJRA CITY**

**Rate Analysis for Asphalt Wearing Course**

**AWC**

Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick)

(iv) 4.5% Bitumen

Sr. No.	Description	Unit	Lead (Km)	Qty	Rate (Rs)	Amount (Rs.)
1	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick) (iv) 4.5% Bitumen	per inch thicknes per 100Sft.		1.00	15,867.50	15,867.50
2	Carriage of 100 cft of all materials like stone aggregate spawl kanker lime surkhi etc or 150 cft of timber by truck or by any other means owned by the contratcor.					
	1st KM	100 Cft	1	0.1243	334.80	41.62
	2nd KM	100 Cft	1	0.1243	160.30	19.93
	3rd KM	100 Cft	1	0.1243	126.40	15.71
	4th KM	100 Cft	1	0.1243	90.55	11.26
	5th KM	100 Cft	1	0.1243	84.65	10.52
	6th KM	100 Cft	1	0.1243	83.30	10.35
	7th KM	100 Cft	1	0.1243	77.85	9.68
	8th KM	100 Cft	1	0.1243	77.05	9.58
	9th KM	100 Cft	1	0.1243	72.55	9.02
	10th KM	100 Cft	1	0.1243	68.20	8.48
	From 11 km to 200 km	100 Cft	93	0.1243	59.45	687.24
<b>Total.</b>						<b>16,700.87</b>

**Total Amount per 100 Sft**

**16,700.87**

**Total cast for Per Sft**

**167.01**

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER  
TREATMENT PLANT (WWTP) GOJRA CITY**

**Rate Analysis for Lead**

Ser	Description	Unit	Quantity	Rate	Amount (Rs.)
<b>A</b>	<b><u>Carraige</u></b> Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Chapter No - 1 / Item no - 1				
	1st Km	100 Cft	1	334.80	334.80
	2nd Km	100 Cft	1	160.30	160.30
	3rd Km	100 Cft	1	126.40	126.40
	4th Km	100 Cft	1	90.55	90.55
	5th Km	100 Cft	1	84.65	84.65
	6th Km	100 Cft	1	83.30	83.30
	7th Km	100 Cft	1	77.85	77.85
	8th Km	100 Cft	1	77.05	77.05
	9th Km	100 Cft	1	72.55	72.55
	10th Km	100 Cft	1	68.20	68.20
	10th Km to 95th Km / 103 - 10 = 93 Km	100 Cft	93	59.45	5,528.85
<b>Total Cost of 100 Cft</b>					<b>6,704.50</b>

**RATE ANALYSIS PROVIDING & FIXING OF REINFORCED PLASTIC COMPOSITE (RPC) MANHOLE  
COVERS 24" I/D WITH RPC FRAME**

[illegible]

**RATE ANALYSIS PROVIDING & FIXING OF REINFORCED PLASTIC COMPOSITE (RPC) MANHOLE COVERS 24"**  
**I/D WITH RPC FRAME**

4    RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (24" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).					
	100 No. @	Rs. 9660.00	Each	Rs. 966,000	/-
				Total:- Rs. 966,000	/-
Add 20 % Contract profit & OHC				Rs. 193,200	/-
				<b>Total:- Rs. 1,159,200</b>	<b>/-</b>
Rate Per Number				<b>Say Rs. 11,592</b>	<b>/-</b>



<b>PUNJAB CITIES PROGRAM (PCP)</b> <b>Rehabilitation of Sewerage Jaranwala</b> <b>Rate Analysis for Lead</b>					
Ser	Description	Unit	Quantity	Rate	Amount (Rs.)
<b>A</b>	a) Providing and laying sub-base course of stone product of approved quality and grade, including placing, mixing, spreading and compaction of sub-base material to required depth, camber, grade to achieve 100% maximum modified AASHO dry density, including carriage of all material to site of work except gravel and aggregate. (C-18/4ii)	100 Cft	1	9,695.25	9,695.25
<b>B</b>	<b>Carraige</b> Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Chapter No - 1 / Item no - 1				
	1st Km	100 Cft	1	334.8	334.80
	2nd Km	100 Cft	1	160.3	160.30
	3rd Km	100 Cft	1	126.4	126.40
	4th Km	100 Cft	1	90.55	90.55
	5th Km	100 Cft	1	84.65	84.65
	6th Km	100 Cft	1	83.3	83.30
	7th Km	100 Cft	1	77.85	77.85
	8th Km	100 Cft	1	77.05	77.05
	9th Km	100 Cft	1	72.55	72.55
	10th Km	100 Cft	1	68.2	68.20
	10th Km to 95th Km / 103 - 10 = 93 Km	100 Cft	93	59.45	5,528.85
					<b>16,399.75</b>
	Add 20% Loose Factor				3,279.95
<b>Total Cost of 100 Cft</b>					<b>19,679.70</b>

**RATE ANALYSIS FOR 27" DIA SEWER PIPE BY JACKING METHOD.****Unit = (100 Rft. For 27" Dia)**

Ser. No.	Description	Unit	Qty	Rate	Amount (Rs.)
1	Lowering of 27" dia pipe by crane for jacking to save the built up structure built up structure Length (100ft 12.50 pipe, 8' long)				
a).	<b><u>Hire Charges of Crane Capacity 20 Ton.</u></b>				
Input Rates	Hire charges of crane @ Rs. 4793/ Hour (for 3-Days) 8 working hour a day =24 hours (According to RCC Pipe weight Capacity).	P.Hour	24.00	4793	115,032
b).	<b><u>Labour Charges</u></b>				
Input Rates	Skilled labour 4 person per day (for 3-Days) 12-Person	P.No	12.00	1400	16,800
Input Rates	Semi-skilled labour 5 person per day (for 3-Days) 15-Person	P.No	15.00	1050	15,750
Input Rates	Un-skilled labour 5 person per day (for 3-Days) 15-Person	P.No	15.00	1050	15,750
2	Hire charges of heavy R.S Joist, wooden planks, struts, 10 KVA generator i/c cost of POL, wages for generator operator i/c freight charges of all T&P from market to site of work and back from site of work to market. For 3 days	P.Day	3.00	2800	8,400
3	Jacking apparatus required i/c cost of hydraulic oil and freight charges of apparatus from market to site of work and from site of work to market/store i/c wages of operator. 2 sets @ Rs.2400/set	P.Day	3.00	4800	14,400
				<b>Total :-</b>	<b>186,132.00</b>
				Add 10% Over-head Charges :-	18,613.20
				Add 10% Contractor's Profit :-	18,613.20
				<b>Grand Total :-</b>	<b>223,358.40</b>
				<b>Rate Per Rft :-</b>	<b>223,358.40 /100</b>
				<b>Say Rs. :-</b>	<b>2,234</b>

**RATE ANALYSIS FOR 30" DIA SEWER PIPE BY JACKING METHOD.****Unit = (100 Rft. For 33" Dia)**

Ser. No.	Description	Unit	Qty	Rate	Amount (Rs.)
1	Lowering of 33" dia pipe by crane for jacking to save the built up structure built up structure Length (100ft 12.50 pipe, 8' long)				
a).	<b><u>Hire Charges of Crane Capacity 20 Ton.</u></b>				
Input Rates	Hire charges of crane @ Rs. 4793/ Hour (for 3-Days) 8 working hour a day =24 hours (According to RCC Pipe weight Capacity).	P.Hour	24.00	4793	115,032
b).	<b><u>Labour Charges</u></b>				
Input Rates	Skilled labour 5 person per day (for 3-Days) 15-Person	P.No	15.00	1400	21,000
Input Rates	Semi-skilled labour 6 person per day (for 3-Days) 18-Person	P.No	18.00	1050	18,900
Input Rates	Un-skilled labour 6 person per day (for 3-Days) 18-Person	P.No	18.00	1050	18,900
2	Hire charges pf heavy R.S Joist, wooden planks, struts, 10 KVA generator i/c cost of POL, wages for generator operator i/c freight charges of all T&P from market to site of work and back from site of work to market. For 3 days	P.Day	3.00	2800	8,400
3	Jacking apparatus required i/c cost of hydraulic oil and freight charges of apparatus from market to site of work and from site of work to market/store i/c wages of operator.2 sets @ Rs.2400/set	P.Day	3.00	4800	14,400
				<b>Total : -</b>	<b>196,632.00</b>
				Add 10% Over-head Charges : -	19,663.20
				Add 10% Contractor's Profit : -	19,663.20
				<b>Grand Total : -</b>	<b>235,958.40</b>
				<b>Rate Per Rft : -</b>	<b>235,958.40 /100</b>
				<b>Say Rs. : -</b>	<b>2,360</b>

**RATE ANALYSIS FOR 48" DIA SEWER PIPE BY JACKING METHOD.****Unit = (100 Rft. For 48" Dia)**

Ser. No.	Description	Unit	Qty	Rate	Amount (Rs.)
1	Lowering of 48" dia pipe by crane for jacking to save the built up structure built up structure Length (100ft 12.50 pipe, 8' long)				
a).	<b>Hire Charges of Crane Capacity 20 Ton.</b>				
Input Rates	Hire charges of crane @ Rs. 5607/ Hour (for 4-Days) 8 working hour a day = 32 hours (According to RCC Pipe weight Capacity).	P.Hour	32.00	5270	168,640
b).	<b>Labour Charges</b>				
Input Rates	Skilled labour 7 person per day (for 4-Days) 28-Person	P.No	28.00	1600	44,800
Input Rates	Semi-skilled labour 8 person per day (for 4-Days) 32-Person	P.No	32.00	1050	33,600
Input Rates	Un-skilled labour 9 person per day (for 4-Days) 36-Person	P.No	36.00	1050	37,800
2	Hire charges of heavy R.S Joist, wooden planks, struts, 10 KVA generator i/c cost of POL, wages for generator operator i/c freight charges of all T&P from market to site of work and back from site of work to market. For 4 days	P.Day	4.00	3500	14,000
3	Jacking apparatus required i/c cost of hydraulic oil and freight charges of apparatus from market to site of work and from site of work to market/store i/c wages of operator. 2 sets @ Rs.2850/set	P.Day	4.00	5700	22,800
				<b>Total : -</b>	<b>321,640.00</b>
				Add 10% Over-head Charges : -	32,164.00
				Add 10% Contractor's Profit : -	32,164.00
				<b>Grand Total : -</b>	<b>385,968.00</b>
				<b>Rate Per Rft : -</b>	<b>385,968.00 /100</b>
				<b>Say Rs. : -</b>	<b>3,860</b>

**RATE ANALYSIS FOR 54" DIA SEWER PIPE BY JACKING METHOD.****Unit = (100 Rft. For 54" Dia)**

Ser. No.	Description	Unit	Qty	Rate	Amount (Rs.)
1	Lowering of 54" dia pipe by crane for jacking to save the bilt up stracture built up structure Length (100ft 12.50 pipe,8' long)				
a).	<b>Hire Charges of Crane Capacity 20 Ton.</b>				
Input Rates	Hire charges of crane @ Rs. 5607/ Hour (for 5-Days) 8 working hour a day =40 hours (According to RCC Pipe weight Capacity).	P.Hour	40.00	5270	210,800
b).	<b>Labour Charges</b>				
Input Rates	Skilled labour 4 person per day (for 5-Days) 20-Person	P.No	20.00	1600	32,000
Input Rates	Sami-skilled labour 5 person per day (for 5-Days) 25-Person	P.No	25.00	1050	26,250
Input Rates	Un-skilled labour 5 person per day (for 5-Days) 25-Person	P.No	25.00	1050	26,250
2	Hire charges pf heavy R.S Joist, wooden planks, struts, 10 KVA generator i/c cost of POL, wages for generator operator i/c freight charges of all T&P from market to site of work and back from site of work to market. For 5 days	P.Day	5.00	4450	22,250
3	Jacking appratus required i/c cost of hydraulic oil and freight charges of appratus from market to site of work and from site of work to market/store i/c wages of operator.2 sets @ Rs.3250/set	P.Day	5.00	6500	32,500
				<b>Total : -</b>	<b>350,050.00</b>
				Add 10% Over-head Charges : -	35,005.00
				Add 10% Contractor's Profit : -	35,005.00
				<b>Grand Total : -</b>	<b>420,060.00</b>
				<b>Rate Per Rft : -</b>	<b>420,060.00 /100</b>
				<b>Say Rs. : -</b>	<b>4,201</b>

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER  
TREATMENT PLANT (WWTP) GOJRA CITY**  
**Rate Analysis for Asphalt Base Course**

**ABC**

Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick)  
(iv) 4% Bitumen

Sr. No.	Description	Unit	Lead (Km)	Qty	Rate (Rs)	Amount (Rs.)
1	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (1.5 inch thick) (iv) 4% Bitumen (C-18/10)	per inch thickne ss per 100Sft.		1.00	14,803.30	14,803.30
2	Carriage of 100 cft of all materials like stone aggregate spawl kanker lime surkhi etc or 150 cft of timber by truck or by any other means owned by the					
	1st KM	100 Cft	1	0.1243	334.80	41.62
	2nd KM	100 Cft	1	0.1243	160.30	19.93
	3rd KM	100 Cft	1	0.1243	126.40	15.71
	4th KM	100 Cft	1	0.1243	90.55	11.26
	5th KM	100 Cft	1	0.1243	84.65	10.52
	6th KM	100 Cft	1	0.1243	83.30	10.35
	7th KM	100 Cft	1	0.1243	77.85	9.68
	8th KM	100 Cft	1	0.1243	77.05	9.58
	9th KM	100 Cft	1	0.1243	72.55	9.02
	10th KM	100 Cft	1	0.1243	68.20	8.48
	From 11 km to 200 km	100 Cft	93	0.1243	59.45	687.24
<b>Total.</b>						<b>15,636.67</b>

**Total Amount per 100 Sft****15,636.67****Total cast for Per Sft****156.37**

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER  
TREATMENT PLANT (WWTP) GOJRA CITY**  
**Rate Analysis for Asphalt Base Course**

**ABC 2"**

Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick)

(iv) 4% Bitumen

Sr. No.	Description	Unit	Lead (Km)	Qty	Rate (Rs)	Amount (Rs.)
1	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (3 inch thick) (iv) 4% Bitumen	per inch thickness per 100Sft.		1.00	14,803.30	14,803.30
2	Carriage of 100 cft of all materials like stone aggregate spawl kanker lime surkhi etc or 150 cft of timber by truck or by any other means owned by the					
	1st KM	100 Cft	1	0.1243	334.80	41.62
	2nd KM	100 Cft	1	0.1243	160.30	19.93
	3rd KM	100 Cft	1	0.1243	126.40	15.71
	4th KM	100 Cft	1	0.1243	90.55	11.26
	5th KM	100 Cft	1	0.1243	84.65	10.52
	6th KM	100 Cft	1	0.1243	83.30	10.35
	7th KM	100 Cft	1	0.1243	77.85	9.68
	8th KM	100 Cft	1	0.1243	77.05	9.58
	9th KM	100 Cft	1	0.1243	72.55	9.02
	10th KM	100 Cft	1	0.1243	68.20	8.48
	From 11 km to 200 km	100 Cft	93	0.1243	59.45	687.24

**Total. 15,636.67**

**Total Amount per 100 Sft 15,636.67**

**Total cast for Per Sft 156.37**

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER  
TREATMENT PLANT (WWTP) GOJRA CITY**  
**Rate Analysis for Asphalt Wearing Course**

**AWC**

Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (2 inch thick)  
(iv) 4.5% Bitumen

Sr. No	Description	Unit	Lead (Km)	Qty	Rate (Rs)	Amount (Rs.)
1	Providing and laying plant premixed bituminous carpet, including compaction and finishing to required camber, grade and density. (1.5 inch thick) (iv) 4.5% Bitumen	per inch thickness per 100Sft.		1.00	15,867.50	15,867.50
2	Carriage of 100 cft of all materials like stone aggregate spawl kanker lime surkhi etc or 150 cft of timber by truck or by any other means owned by the					
	1st KM	100 Cft	1	0.1243	334.80	41.62
	2nd KM	100 Cft	1	0.1243	160.30	19.93
	3rd KM	100 Cft	1	0.1243	126.40	15.71
	4th KM	100 Cft	1	0.1243	90.55	11.26
	5th KM	100 Cft	1	0.1243	84.65	10.52
	6th KM	100 Cft	1	0.1243	83.30	10.35
	7th KM	100 Cft	1	0.1243	77.85	9.68
	8th KM	100 Cft	1	0.1243	77.05	9.58
	9th KM	100 Cft	1	0.1243	72.55	9.02
	10th KM	100 Cft	1	0.1243	68.20	8.48
	From 11 km to 200 km	100 Cft	93	0.1243	59.45	687.24
<b>Total.</b>						<b>16,700.87</b>
<b>Total Amount per 100 Sft</b>						<b>16,700.87</b>
<b>Total cast for Per Sft</b>						<b>167.01</b>



RATE ANALYSIS FOR LEFT IN PLACE SHUTTERING (USING EUCALYPTUS WOOD)

Note:-

EXCAVATION OF TRENCH WILL BE PAID WITH TIMBERING, ETC.

DOUBLE STAGE (PER BARREL)

S. No.	Description	Unit	Qty	Rate	Amount
1	Planks 2x96x8x0.16 =245.76 Cft	P.Cft	245.76	1540.00	378470.40
2	Braces 2x2x96x0.5x0.75 =144.00 Cft	P.Cft	144.00	1760.00	253440.00
3	Struts 8x4x10x0.5x0.5 = 80.000 Cft	P.Cft	80.00	1540.00	123200.00
4	Wedges 2x8x4x0.5x0.5x0.5x0.75 = 6.000 Cft	P.Cft	6.00	1760.00	10560.00
	<b>Total Quantity of wood =475.76 Cft</b>				
5	Cost of SS Nails (4" to 9" long)	P.No	192	7.50	1440.00
6	Transportation charges of wood 8 Nos Trip	P.Trip	8	750.00	6000.00

**Total Rs:- 773110.40**

Add 10% Contractor Profit 77311.04

Add 10% Over Head Charges 77311.04

**G.Total Rs:- 927732.48**

Amount for 475.76 Cft 927732.48

Rate Per Cft 1950.00

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER  
TREATMENT PLANT (WWTP) GOJRA CITY**

**GENERAL ABSTRACT OF COST OF WWTP**

<b>S #</b>	<b>Description</b>	<b>Amount (Rs.)</b>
1	<b><u>Sub Head-11 WWTP</u></b>	
<b>A</b>	<b>Anearobic, Facultative and Sludge Drying Pond (MRS)</b>	
A-1	Anearobic, Facultative and Sludge Drying Pond (MRS)	Rs. 143.88
A-2	Anearobic, Facultative and Sludge Drying Pond (Non MRS)	Rs. 140.72
A-3	Floating wetland in Facultative ponds	Rs. 53.86
<b>B</b>	<b>Collecting sump, Drains, course screen, fine screen, grit Chamber, Distribution Chambers, Inlet Chamber &amp; OutLet chamber</b>	
B-1	Inlet/Outlet Channels & Collection/ Distribution Chambers (MRS)	Rs. 59.88
B-2	Inlet/Outlet Channels & Collection/ Distribution Chambers (NON MRS)	Rs. 10.22
C	Transformer 50 KVA & Fesco Connection	Rs. 2.02
D	Office Building	Rs. 5.92
E	Staff building	Rs. 4.04
F	Area Lighting works of WWTP	Rs. 36.36
		<b>Rs. 456.90 millions</b>

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP)  
GOJRA CITY**

**Sub Head # A-1: Anaerobic, Facultative and Sludge Drying Pond**

Sr. No.	Chap # / Item #	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	3/52	Earthwork in excavation of drains, irrigation channels through excavator / drag lines in all kind of soil and conditions(dry, slush,daldal and under water) including its disposal and preparation of working pad for operation of machinery. (Rates includes 100 ft lead)	1000 Cft	8,196,787.05	4,676.00	38,328,176.25
2	3/25	Compaction of earthwork with power road roller, including ploughing, mixing, moisturing earth to optimum moisture content in layers, etc, complete:- i) 95% to 100% maximum modified AASHO dry density.  (Qunatity of compaction includes embankments and in bed of ponds from excavated earth within site. (Contractor will stack the excavated earth from site at suitable places and then will use it for embankments. Quantity of excavated material may increase or decrease.)	1000 Cft	4,209,211.56	1,664.75	7,007,284.94
3	C-3/20	Dressing of earthwork (done by machinery or otherwise and left undressed) to designed section.	100 Sft	212,541.44	306.10	650,589.35
4	C-3/4	Borrowpit excavation undressed lead upto 100 ft (30 metre)	1000 Cft	1,018,962.25	9,092.15	9,264,557.62
5	C-3/17	Transportation of earth all types when the total distance, including the lead covered in the item of work, is more than 1000 ft. (300 m) (This is provisional quantity and will be paid as per actual lead chart to be approved by the Engineer) b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (3 Km.)	1000 Cft	1,018,962.25	6649.35	6,775,436.64
6	18/20	Providing and laying dry brick pavement /soling in streets or roads, etc. sand grouted, laid in proper camber, including preparation, watering, compaction of bed to proper camber, and sand cushion.	100 Cft	28,398.75	25,513.15	7,245,415.69
7	26/42	Providing and fixing barbed wire fencing, with 4 horizontal and two cross wires, with R.C.C. 1:2:4 posts, 5.5"x6"x9" (1.68mx150mmx225 mm) at 8 ft. (2.45 m) centre to centre, reinforced with 4 No. 3/8" (10 mm) dia vertical bars and 1/8" (3 mm) dia stirrups 12" (300 mm) centre to centre, complete in all respects..  ii) in cement concrete 1:4:8 base of size 12"x12"x21" (300x300x525 mm).	100 Rft	7491.00	66,900.60	5,011,523.95
8	Analysis attached	Construction of gate Making and fixing steel grated doors, complete with locking arrangement, angle iron frame 2"x2"x3/8" 50x50x10 mm) and ¾" (20 mm) square bars 4" (100 mm) centre to centre.	No.	2.00	342,400.00	684,800.00
9	3/17	Transportation of earth all types when the total distance, including the lead covered in the item of work, is more than 1000 ft. (300 m) (This is provisional quantity and will be paid as per actual lead chart to be approved by the Engineer) b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (1.6 Km.) (for 1200m) b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (3 Km.)	1000 Cft	3,000,114.00	5387.6	16,163,414.19
			1000 Cft	5,196,673.05	6649.35	34,554,497.95
10	16/31i+iii	Providing and laying stone pitching, hand packed, with surface levelled off to the correct section and voids filled in 1:8 cement, sand mortar, in floors of bridges along banks and in appons etc i) top layer on slope	100 Cft	106270.72	17,119.50	18,193,015.91
<b>Total Amount MRS Items</b>						<b>143,878,712.47</b>

Say Rs.

143.88

Million

**RATE ANALYSIS FOR CONSTRUCTION OF GATE**

Item No.	Description	No	Measurements			Quantity
			L	B	D	
1	Excavation in foundation of buildings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and reamming lead upto one chain and lift ordinary soil. 0' to 5.0 ft. Depth	2	3.00	3.00	2.50	45.00
2	Cement concrete brick or stone ballast 1-1/2" to 2" (40mm to 50 mm gauge in foundation and plinth Ratio (1:4:8)	2	3.00	3.00	0.25	4.50
3	Pacca brick work other than building upto 10 ft height in 1:5 cement sand mortar.	4	3.00	0.75	1.25	11.25
		4	1.50	0.75	1.25	5.63
		4	3.00	0.38	5.00	22.50
		4	2.25	0.38	5.00	<u>16.88</u>
						<b>56.25</b>
4	P/L damp proof course with cement concrete 1:2:4 using cement sand and shingle including bitumen coating with 2 coats of bitumen 2" thick	4	3.00	0.38		4.50
		4	2.25	0.38		<u>3.38</u>
						<b>7.88</b>
5	Pucca brick work in ground floor:- (i) Cement sand mortar 1:4	4	3.00	0.38	7.00	31.50
		4	2.25	0.38	7.00	<u>23.63</u>
						<b>55.13</b>
6	Cement pointing struck joints on walls, upto 20' height: b) ratio 1:2	4	3.00		7.00	84.00
		4	2.25		7.00	63.00
						<b>147.00</b>
7	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete. (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Type C (nominal mix 1:2: 4)	2	3.00	3.00	0.67	12.06
		2x4 8	1.88	1.125	0.17	2.88
		2	0.75	0.75	14.75	<u>16.59</u>
						<b>31.53</b>
8	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust). (b) deformed bars. # 6	10	3.25	32.50	1.5/2.204	22.12
		14	3.25	45.50	1.5/2.204	30.97
		8	13.75	110.00	1.5/2.204	74.86
		# 2 26	3.17	82.42	0.17/2.204	<u>6.36</u>
						<b>134.31</b>
9	Making and fixing steel grated doors complete with locking arrangement, angle iron frame 2"x2"x3/8" and 3/4" square walls 4" center to center.	1	16	6		96.00
10	Preparing surface and painting guard bars , gates of iron priming coat	2	16	6		192
	each subsequent coat	2	16	6		192
11	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:4:8) Ratio (1:2:4)	1	4.50	0.95		4.26
		1	31.53	0.88		27.75
						<b>32.01</b>

**RATE ANALYSIS FOR CONSTRUCTION OF GATE**

Sub Head # I-II: Construction of Main Gate:

Item No.	Ref Sor Item/Page	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	C-3/21	Excavation in foundation of bulidings, bridges and other structures including dagbelling, dressing, refilling around structures with excavated earth watering and reamming lead upto one chain and lift ordinary soil.  0' to 5.0 ft. Depth	1000 Cft	45.00	13669.90	615.15
2	C-6/3	Cement concrete brick or stone ballast 1-1/2" to 2" (40mm to 50 mm guage in foundation and plinth Ratio (1:4:8)	100 Cft	4.50	34098.00	1,534.41
3	C-7/7	Pacca brick work other than building upto 10 ft height in 1:5 cement sand mortor.	100 Cft	56.25	32951.50	18,535.22
4	C-6/36	P/L damp proof course with cement concrete 1:2:4 using cement sand and shingle including bitumen coating  with 2 coats of bitumen 2" thick	100 Sft	7.88	12315.15	969.82
5	C-7/5	Pucca brick work in ground floor:- (i) Cement sand mortar 1:4	100 Cft	55.13	35380.80	19,503.67
6	C-11/18	Cement pointing struck joints on walls, upto 20' height:  b) ratio 1:2	100 Sft	147.00	4305.60	6,329.23
7	C6-6-a-ii	P/L reinforced cement concrete (including prestressed concrete), using coarse sand and aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing,rendering and finishing exposed surface, complete.  (a) Reinforced cement concrete in slab of Raft/strip foundation; base slab of column and retaining walls; etc. and other structural members other than those mentioned in 5(a) (i) above not requiring from work, complete in all respects:- Type C (nominal mix 1:2: 4)	1 Cft	31.53	538.30	16,972.68
8	C-6/12	Fabrication of mild steel reinforcement for cement concrete including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust (b) deformed bars. 60 grade	100 Kg	134.31	35068.45	47,099.19
9	C-25/30	Making and fixing steel grated doors complete with locking arrangement, angle iron frame 2"x2"x3/8" and 3/4" square walls 4" center to center.	1 Sft	96.00	2,331.35	223,809.60
10	C-13/5	Preparing surface and painting guard bars , gates of iron bars priming coat each subsequent coat (Two Coats)	100 Sft 100 Sft	192.00 192.00	1063.80 1480.20	2,042.50 2,841.98
11	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)	100 Cft	32.01	6704.50	2,146.19

Total:- (Rs.) 342,399.63

Say Rs. 342,400.00

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**Sub Head # A-1: Anearobic, Facultative and Sludge Drying Pond**

Sr.#	Chp #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	3/52	Earthwork in excavation of drains, irrigation channels through excavator / drag lines in all kind of soil and conditions(dry, slush,daldal and under water) including its disposal and preparation of working pad for operation of machinery. (Rates includes 100 ft lead)						
		5ft	0.75	922156.35		4.00	2,766,469.05	
			0.75	810068.00		4.00	2,430,204.00	
						<b>Total</b>	<b>5,196,673.05</b>	Cft
		Anearobic area	1	232.00	622.00	7.50	1,082,280.00	
		Facultative	1	720.00	720.00	2.00	1,036,800.00	
			1	720.00	330.00	2.00	475,200.00	Cft
			1	720.00	326.50	2.00	470,160.00	
		Sludge pond	1	166177.00		2.00	332,354.00	
							<b>3,396,794.00</b>	
		Deduction of area of road	5	232.00	47.00	5.00	272,600.00	
			4	132.00	47.00	5.00	124,080.00	
							<b>396,680.00</b>	
						<b>Net</b>	<b>3,000,114.00</b>	
						<b>Total</b>	<b>8,196,787.05</b>	
2	3/25	Compaction of earthwork with power road roller, including ploughing, mixing, moisturing earth to optimum moisture content in layers, etc, complete:- i) 95% to 100% maximum modified AASHO dry density.  (Qunatity of compaction includes embankments and in bed of ponds from excavated earth within site. (Contractor will stack the excavated earth from site at suitable places and then will use it for embankments. Quantity of excavated material may increase or decrease.)						
		Anearobic pond	1	448.00	37.50	6.00	100,800.00	
			1	614.00	61.25	16.50	620,523.75	
			1	1025.00	52.50	11.50	618,843.75	
			1	2786.00	48.75	11.50	1,561,901.25	
			1	2700.00	48.75	11.50	1,513,687.50	
						<b>Total</b>	<b>4,415,756.25</b>	Cft
		Deduction as per item No. 1 area of road					396,680.00	
						<b>Net</b>	<b>4,019,076.25</b>	
		Compaction of bed of embankment	4	82.50	50.50	0.50	8,332.50	
			4	630.00	280.00	0.50	352,800.00	
			0.5	166177.00		0.50	41,544.25	
						<b>Total</b>	<b>402,676.75</b>	
		Deduction quantity of clay lining on slopes						
		Anearobic pond	8	131.25	39.04	1.00	40,992.00	
			8	85.75	39.04	1.00	26,781.44	
		Facultative pond	8	655.00	18.85	1.00	98,774.00	
			8	305.00	18.85	1.00	45,994.00	
						<b>Total</b>	<b>212,541.44</b>	
						<b>G.Total</b>	<b>4,209,211.56</b>	

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**Sub Head # A-1: Anearobic, Facultative and Sludge Drying Pond**

Sr.#	Chp #	Description	No.	Measurement			Qty	Unit
3	C-3/20	Dressing of earthwork (done by machinery or otherwise and left undressed) to designed section.	8	131.25	39.04		40,992.00	Sft
			8	85.75	39.04		26,781.44	
			8	655.00	18.85		98,774.00	
			8	305.00	18.85		45,994.00	
						<b>Total</b>	<b>212,541.44</b>	
4	C-3/4	Borrowpit excavation undressed lead upto 100 ft (30 metre) qty difference of excavation and road earth					1,018,962.25	Cft
5		Transportation of earth all types when the total distance, including the lead covered in the item of work, is more than 1000 ft. (300 m) (This is provisional quantity and will be paid as per actual lead chart to be approved by the Engineer) b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (3 Km.)					1,018,962.25	Cft
6	18/20	Providing and laying dry brick pavement /soling in streets or roads, etc. sand grouted, laid in proper camber, including preparation, watering, compaction of bed to proper camber, and sand cushion.	1	448.00	10.00	0.375	1,680.00	Cft
			1	614.00	10.00	0.375	2,302.50	
			1	1025.00	10.00	0.375	3,843.75	
			1	2786.00	10.00	0.375	10,447.50	
			1	2700.00	10.00	0.375	10,125.00	
						<b>Total</b>	<b>28,398.75</b>	
7	26/42	Providing and fixing barbed wire fencing, with 4 horizontal and two cross wires, with R.C.C. 1:2:4 posts, 5.5"x6"x9" (1.68mx150mmx225 mm) at 8 ft. (2.45 m) centre to centre, reinforced with 4 No. 3/8" (10 mm) dia vertical bars and 1/8" (3 mm) dia stirrups 12" (300 mm) centre to centre, complete in all respects..  ii) in cement concrete 1:4:8 base of size 12"x12"x21" (300x300x525 mm).						Rft
			1	3849			3,849.00	
			1	3642			3,642.00	
						<b>Total</b>	<b>7,491.00</b>	
8	RA	Construction of gate including Pillars  Making and fixing steel grated doors, complete with locking arrangement, angle iron frame 2"x2"x3/8" 50x50x10 mm) and ¾" (20 mm) square bars 4" (100mm) centre to centre.	2				2.00	No.
9	3/17	Transportation of earth all types when the total distance, including the lead covered in the item of work, is more than 1000 ft. (300 m) (This is provisional quantity and will be paid as per actual lead chart to be approved by the Engineer) b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (1.6 Km.) (for 1200m) b) for every 330 ft. (100 m) additional lead or part thereof, beyond ¼ mile (400 m) upto one mile. (3 Km.)					3,000,114.00	Cft
							5,196,673.05	Cft

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**Sub Head # A-1: Anearobic, Facultative and Sludge Drying Pond**

Sr.#	Chp #	Description	No.	Measurement			Qty	Unit
10	16/31i+ii	Providing and laying stone pitching, hand packed, with surface levelled off to the correct section and voids filled in 1:8 cement, sand mortar, in floors of bridges along banks and in appons etc i) top layer on slope iii) stone pitching/filling on slope or on level (other than top layer).	8	131.25	39.04	0.50	20,496.00	
			8	85.75	39.04	0.50	13,390.72	
			8	655.00	18.85	0.50	49,387.00	
			8	305.00	18.85	0.50	22,997.00	
							<b>106,270.72</b>	Cft



**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT****Sub Head # A-2: Anaerobic, Facultative and Sludge Drying Pond**

SR. NO.	NON MRS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
					(Rs)	(Rs)
1	RA	<p>Providing, laying to designed section and compacting (to at least 90% of the maximum modified Proctor dry density) clay as liner (source to be approved by the Engineer), complete in all respects. Liner material should be compacted in layers not exceeding 6"(150mm). Liner material should be compacted slightly wet of optimum. Scarify the top of already compacted liner layer to a minimum depth of 1.0 inch before placing the next layer. Clods more than 5.0 mm size must be present in liner material, these must be pulverized before placing. (both in bed &amp; slope)</p> <p>The material suitable to be used for compacted soil liner shall meet the following specifications:            Vertical in-situ hydraulic conductivity in compacted state <math>\leq 1 \times 10^{-7}</math> cm/sec            Fines (particles passing 0.075 mm sieve) <math>\geq 30\%</math>            Plasticity index = 8 – 30 %            Gravels (particles passing 75 mm sieve and retaining 4.75 mm sieve) <math>\leq 20\%</math>            Maximum particle size <math>\leq 10</math> mm            (Item rate include lead from any source within district up to WWTP)</p>	Cft	1,340,038	20.10	26,934,770.13
2	RA	<p>Providing and installation of HDPE Geomembrane liner 1.5mm (60mil) thick at site according to the approved drawings, specifications and instruction of the engineer. The charges of wastage, overlap and testing etc. shall include in the rate.</p>	Sft	972,053	115.00	111,786,059.35
3		<p>Providing, testing, commissioning and training of wastewater sampling and testing equipment for measuring wastewater pollution parameters like temperature, pH, BOD, COD, TSS, TDS, VSS, Oil &amp; Grease, Turbidity and Alkalinity including all relevant instruments, meters and glass wares complete in all respects as per satisfaction of the Engineer</p>	LS	1.00	2000000.00	2,000,000.00
<b>Total Amount Non MRS Items</b>						<b>140,720,829.48</b>

**Say Rs. 140.72 Million**

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP)  
GOJRA CITY**

**Sub Head # A-2: Anearobic, Facultative and Sludge Drying Pond**

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	RA-02	<p>Providing, laying to designed section and compacting (to at least 90% of the maximum modified Proctor dry density) clay as liner (source to be approved by the Engineer), complete in all respects. Liner material should be compacted in layers not exceeding 6"(150mm). Liner material should be compacted slightly wet of optimum. Scarify the top of already compacted liner layer to a minimum depth of 1.0 inch before placing the next layer. Clods more than 5.0 mm size must be present in liner material, these must be pulverized before placing. (both in bed &amp; slope)</p> <p>The material suitable to be used for compacted soil liner shall meet the following specifications:            Vertical in-situ hydraulic conductivity in compacted state <math>\leq 1 \times 10^{-7}</math> cm/sec            Fines (particles passing 0.075 mm sieve) <math>\geq 30\%</math>            Plasticity index = 8 – 30 %            Gravels (particles passing 75 mm sieve and retaining 4.75 mm sieve) <math>\leq 20\%</math>            Maximum particle size <math>\leq 10</math> mm            (Item rate include lead from any source within district up to WWTP).</p>						
		Anearobic bed	4	82.50	50.50	1.50	24,997.50	
		Slop	8	131.25	41.54	1.00	43,617.00	
			8	85.75	41.54	1.00	28,496.44	
		Facultative bed	4	633.75	283.75	1.50	1,078,959.38	
			8	655.00	21.35	1.00	111,874.00	
			8	305.00	21.35	1.00	52,094.00	
						<b>Total</b>	<b>1,340,038.32</b>	Cft
2	RA-03	<p>Providing and installation of HDPE Geomembrane liner 1.5mm (60mil) thick at site according to the approved drawings, specifications and instruction of the engineer. The charges of wastage, overlap and testing etc. shall include in the rate.</p>						
		Anearobic bed	4	82.50	50.50		16,665.00	
		Slop	8	131.25	41.54		43,617.00	
			8	85.75	41.54		28,496.44	
		Facultative bed	4	633.75	283.75		719,306.25	
			8	655.00	21.35		111,874.00	
			8	305.00	21.35		52,094.00	
						<b>Total</b>	<b>972,052.69</b>	Sft
3		<p>Providing, testing, commissioning and training of wastewater sampling and testing equipment for measuring wastewater pollution parameters like temperature, pH, BOD, COD, TSS, TDS, VSS, Oil &amp; Grease, Turbidity and Alkalinity including all relevant instruments, meters and glass wares complete in all respects as per satisfaction of the Engineer.</p>						
							1.00	LS

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP)****Sub Head # B.1: Inlet/Outlet Channels & Collection/ Distribution Chambers (MRS)**

Sr. No.	MRS 2nd Bi-Annual 2023 Chap# / Item#	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	R.A	Collecting pit / chamber	1 Each	1.00	652406	652,406.00
2	R.A	Course Screen	1 Each	1.00	223,410.00	223,410.00
3	R.A	Fine Screen	1 Each	1.00	478,359.00	478,359.00
4	R.A	Grit Chamber	1 Each	1.00	2,500,732.00	2,500,732.00
5	R.A	Drain 3x3.25	1 Rft	70.00	10063.00	704,410.00
		2.50x3.25	1 Rft	630.00	10021.00	6,313,230.00
		2x3.75	1 Rft	2978.00	9620.00	28,648,360.00
6	R.A	Construction of distribution chamber	1 Each	1.00	234737.00	234,737.00
7	R.A	Construction of outfall sump and crossing seepage drain	1 Each	2.00	1118409.00	2,236,818.00
8	R.A	Construction of Inlet chamber Anarobic pond	1 Each	4.00	718808.00	2,875,232.00
9	R.A	Construction of Outlet of Anarobic pond	1 Each	4.00	751089.00	3,004,356.00
10	R.A	Construction of Inlet Chamber of Facultative pond	1 Each	4.00	664136.00	2,656,544.00
11	R.A	Construction of Outlet Chamber Facultative pond	1 Each	4.00	239517.00	958,068.00
12		<b>Covering of drain</b>  Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-				
	6/6	(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:2:4	Cft	745.56	674.30	502,731.11

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP)****Sub Head # B.1: Inlet/Outlet Channels & Collection/ Distribution Chambers (MRS)**

Sr. No.	MRS 2nd Bi-Annual 2023 Chap# / Item#	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
13	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)	100 Kg	22,366.80	35068.45	7,843,690.07
14	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	656.09	6,704.50	43,987.74
<b>Total Amount MRS Items</b>						<b>59,877,070.92</b>

**Say Rs. 59.88 Million**

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP)  
GOJRA CITY**

**Sub Head # B.1: Collecting sump, Drains, coarse screen, fine screen, grit Chamber, Distribution Chambers, Inlet Chamber & OutLet chamber**

Sr.#	Chap # / Item #	Description	Unit	No.	Measurement			Qty
					L	W	D	
1	R.A	Collecting pit / chamber	Each	1				1.00
2	R.A	Course Screen	Each	1				1.00
3	R.A	Fine Screen	Each	1				1.00
4	R.A	Grit Chamber	Each	1				1.00
5	R.A	Drain						
		3x3.5	Rft	1	70			70.00
		2.50x3.75	Rft	1	630			630.00
		2x3.75	Rft	1	2978			2978.00
6	R.A	Construction of distribution chamber	Each	1				1.00
7	R.A	Construction of outfall sump and crossing seepage drain	Each	2				2.00
8	R.A	Construction of Inlet chamber Anarobic pond	Each	4				4.00
9	R.A	Construction of Outlet of Anarobic pond	Each	4				4.00
10	R.A	Construction of Inlet Chamber of Facultative pond	Each	4				4.00
11	R.A	Construction of Outlet Chamber Facultative pond	Each	4				4.00
12		Covering of drain Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-						
	6/6	(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:2:4		9	18	3.5	0.68	385.56
				1	60	3	1	180.00
				2	40	3	0.75	180.00
							<b>Total</b>	<b>745.56</b>
13	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)	Kg			3.0 kg/cft		22366.80
14	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:2.4)	Cft	1	745.56	0.88		656.09

## RATE ANALYSIS

## CONSTRUCTION OF COLLECTING SUMP 12.5FT DIA

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1	3.14x20x20x0.25		6.00	1884.00	Cft
2	7/30	Supplying and filling sand under floor; or plugging in wells. (20% of excavation)					376.80	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). (h) Ratio 1: 3: 6	1	3.14x16x16x0.25		0.33	87.54	Cft
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.);-						
	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)			2.5 kg/cft		860.68	Kg
	6/6	(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-						
		(1) Type A (nominal mix 1: 1.5: 3)	1	3.14x15.5x15.5x0.25		0.75	141.45	Cft
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	1	3.14x13.25	0.75	6.5	202.82	Cft

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)						
		Ratio (1:3.6)	1	87.54	0.92		80.89	
		Ratio (1:1.5.3)	1	344.27	0.84		289.19	
							<b>370.07</b>	
7	6/31A	Providing and embedding 10 (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect.						
		i) 10"wide 6 mm thick	1	3.14x13.25			41.61	Rft
8	13/9	Bitumen coating to plastered or cement concrete surface:-						
		i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	1	3.14x14		7.25	318.71	Sft

## RATE ANALYSIS

## CONSTRUCTION OF COLLECTING SUMP 12.5FT DIA

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	1884.00	11,558.50	21,776.21
2	C-10/3	Supplying and filling sand under floor; or plugging in wells.	100 Cft	376.80	3,061.20	11,534.60
3	6/5	compacting, finishing and curing complete (including screening and washing of stone aggregate). (h) Ratio 1: 3: 6	100 Cft	87.54	38,182.80	33,424.53
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-				
		(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (1) Type A (nominal mix 1: 1.5: 3	Per Cft	141.45	597.40	84,500.55
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	Per Cft	202.82	733.45	148,761.54
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)	100 Kg	860.68	35068.45	301,826.75
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	370.07	6,704.50	24,811.57



## Annexure02 - Annexure-B

Sr. No.	Ref. CSR	Description	Unit		Quantity	Rate (Rs)	Amount (Rs)
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect.					
		i) 10" wide 6 mm thick	Per	Rft	41.61	412.80	17,174.54
8	13/9	Bitumen coating to plastered or cement concrete surface:-					
		i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100	Sft	318.71	2697.05	8,595.77
<b>Total</b>							<b>652,406.06</b>

**Say Rs. 652,406.00**

## RATE ANALYSIS

## CONSTRUCTION OF COURSE SCREEN

Unit =1

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-						
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:2:4)	1	3.00	4.00	0.58	96.52	Cft
2	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)			2.0kg/cft		193.05	Kg
3	C25/ I 10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trasses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding erection in position (of darwing). 2x3/8" flate patti	15	4.60	@ wt of 1.18 kg /Rft		81.42	Kg
4	C25/ I 11	Erection in position iron trasses, staging of water tank etc.					81.42	Kg
5	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:2.4)	1	96.52	0.88		84.94	Cft

## RATE ANALYSIS

## CONSTRUCTION OF COURSE SCREEN

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-				
		(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-				
		(1) Type A (nominal mix 1:2:4)	Per Cft	96.52	538.30	51,958.65
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:2:4)	Per Cft	96.52	674.30	65,085.86
2	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):-				
		('c) Deformed bars (Grade-60)	100 Kg	193.05	35068.45	67,698.66
3	C25/ I 10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trasses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding erection in position.	100 Kg	81.42	38861.65	31,641.16
4	C25/11	Erection in position iron trasses, staging of water tank etc.	100 Kg	81.42	1634.10	1,330.48
5	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	84.94	6,704.50	5,694.85
<b>Total</b>						<b>223,409.67</b>
<b>Say Rs.</b>						<b>223,410.00</b>

## RATE ANALYSIS

## CONSTRUCTION OF FINE SCREEN

Unit =1

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1	11	11.83	3.5	455.46	Cft
2	C-10/3	Supplying and filling sand under floor; or plugging in wells.					136.64	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). (h) Ratio 1: 3: 6	1	11	11.83	0.25	32.53	Cft
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-						
	6/6	(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-  (1) Type A (nominal mix 1: 1.5: 3)	1	11	10.33	0.67	76.13	
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	2	11.25	0.58	3.5	45.68	
			1	6	0.58	3.5	12.18	
			4	4.17	0.58	3.5	33.86	
			1	3	10.08	0.58	17.54	
							<b>109.25</b>	
		Deduction	4	4	0.58	2.5	23.20	
						<b>Net</b>	<b>86.05</b>	Cft
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)			2.0kg/cft		243.61	Kg

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)						
		Ratio (1:3.6)	1	32.53	0.92		30.06	
		Ratio (1:1.5.3)	1	162.19	0.84		136.24	
							<b>166.30</b>	Cft
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect.						
		i) 10"wide 6 mm thick	2	12			24.00	
			2	9.5			19.00	
			1	6			6.00	
							<b>49.00</b>	Rft
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	2	11		4.18	91.96	Sft
9	C25/ I 10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trasses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding erection in position (of darwing).						
		2x3/8" flate patti	2x52	4.60	@ wt of	1.18 kg /Rft	564.51	Kg
10	C25/ I 11	Erection in position iron trasses, staging of water tank etc.					564.51	Kg

## RATE ANALYSIS

## CONSTRUCTION OF FINE SCREEN

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	455.46	11,558.50	5,264.38
2	C-10/3	Supplying and filling sand under floor; or plugging in wells.	100 Cft	136.64	3,061.20	4,182.72
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone (h) Ratio 1: 3: 6	100 Cft	32.53	38,182.80	12,421.82
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (1) Type A (nominal mix 1: 1.5: 3)	Per Cft	76.13	597.40	45,481.32
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	Per Cft	86.05	733.45	63,116.75
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)	100 Kg	243.61	35068.45	85,431.72
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	166.30	6,704.50	11,149.37

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	Per Rft	49.00	412.80	20,227.20
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100 Sft	91.96	2697.05	2,480.21
9	C25/ I 10	Fabrication of heavy steel work, with angl, tees, flat iron, rounded iron and sheet iron for making trasses, girders, tanks etc. including cutting, drilling, revetting, handling, amembling and fixing but excluding errection in position.	100 Kg	564.51	38861.65	219,378.68
10	C25/11	Erection in position iron trasses, staging of water tank etc.	100 Kg	564.51	1634.10	9,224.69
<b>Total</b>						<b>478,358.85</b>
<b>Say Rs.</b>						<b>478,359.00</b>

## RATE ANALYSIS

## CONSTRUCTION OF GRIT CHAMBER

Unit =1

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1	60.5	26.08	4.75	7,494.74	Cft
2	C-10/3	Supplying and filling sand under floor; or plugging in wells.					2,248.42	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). (h) Ratio 1: 3: 6	1	60.5	22.08	0.25	333.96	Cft
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-						
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	2	60.5	0.75	4.75	431.06	
			1	34.5	0.75	4.75	122.91	
			2	19.08	0.75	4.75	135.95	
			2	19.08	3	0.68	77.85	
							<b>767.76</b>	
		Deduction	4	4	0.75	2.5	30.00	
						<b>Net</b>	<b>737.76</b>	Cft
	6/6	(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-  (1) Type A (nominal mix 1: 1.5: 3)	1	34.5	21.83	0.75	564.85	
			2	11.79	9.75	0.75	172.43	
						<b>Total</b>	<b>737.28</b>	Cft
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)			2.0kg/cft		2,950.08	Kg



Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)						
		Ratio (1:3.6)	1	333.96	0.92		308.58	
		Ratio (1:1.5.3)	1	1475.04	0.84		1,239.03	
							<b>1,547.61</b>	Cft
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect.						
		i) 10"wide 6 mm thick	2	60.5			121.00	
			1	34.5			34.50	
			2	19.08			38.16	
							<b>193.66</b>	Rft
8	13/9	Bitumen coating to plastered or cement concrete surface:-						
		i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	2	60.5		5.50	665.50	Sft

## RATE ANALYSIS

## CONSTRUCTION OF GRIT CHAMBER

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	7494.74	11,558.50	86,627.95
2	C-21/24	Providing and laying sand under and around the sewer pipe, including leveling, manual compaction, complete in all respect. (21/24)	100 Cft	2248.42	3,061.20	68,828.69
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone (h) Ratio 1: 3: 6	100 Cft	333.96	38,182.80	127,515.28
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-				
		(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-				
		(1) Type A (nominal mix 1: 1.5: 3)	Per Cft	737.28	597.40	440,451.07
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	Per Cft	737.76	733.45	541,110.18
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):-				
		(c) Deformed bars (Grade-60)	100 Kg	2,950.08	35068.45	1,034,547.43
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	1,547.61	6,704.50	103,759.70

Annexure02 - Annexure-B

7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	Per Rft	193.66	412.80	79,942.85
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100 Sft	665.50	2,697.05	17,948.87

**Total 2,500,732.03**

**Say Rs. 2,500,732.00**

## RATE ANALYSIS

## CONSTRUCTION OF DRAIN 3'X3.25'

Unit =10'

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1	10.00	5.50	3.00	165.00	Cft
2	C-21/24	Providing and laying sand under and around the sewer pipe, including leveling, manual compaction, complete in all respect.					33.00	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). (h) Ratio 1: 3: 6	1	10.00	5.50	0.25	13.75	Cft
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-						
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	2	10	0.5	3.25	32.50	Cft
	6/6	(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (1) Type A (nominal mix 1: 1.5: 3)	1	10	5	0.5	25.00	Cft
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)			2.5 kg/cft		115.00	Kg

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)						
		Ratio (1:3.6)	1	13.75	0.92		12.71	
		Ratio (1:1.5.3)	1	57.50	0.84		48.30	
							<b>61.01</b>	Cft
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect.						
		i) 10"wide 6 mm thick	2	10			20.00	Rft
8	13/9	Bitumen coating to plastered or cement concrete surface:-						
		i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	1	10		3.75	37.50	Sft

## RATE ANALYSIS

## CONSTRUCTION OF DRAIN 3'X3.25'

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	165.00	11,558.50	1,907.15
2	C-21/24	Providing and laying sand under and around the sewer pipe, including leveling, manual compaction, complete in all respect.	100 Cft	33.00	3,061.20	1,010.20
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone (h) Ratio 1: 3: 6	100 Cft	13.75	38,182.80	5,250.14
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-				
		(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-				
		(1) Type A (nominal mix 1: 1.5: 3)	Per Cft	25.00	597.40	14,935.00
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:-				
		(1) Type A (nominal mix 1:1.5:3)	Per Cft	32.50	733.45	23,837.13
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):-	100 Kg	115.00	35068.45	40,328.72
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	61.01	6,704.50	4,090.08

## Annexure02 - Annexure-B

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	Per Rft	20.00	412.80	8,256.00
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100 Sft	37.50	2,697.05	1,011.39
<b>Total</b>						<b>100,625.80</b>
<b>Rate P/Rft</b>						<b>10,062.58</b>
<b>Say Rs.</b>						<b>10063.00</b>

## RATE ANALYSIS

## CONSTRUCTION OF DRAIN 2.50'X3.25'

Unit =10'

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1	10.00	5.00	3.00	150.00	Cft
2	C-21/24	Providing and laying sand under and around the sewer pipe, including leveling, manual compaction, complete in all respect.					30.00	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). (h) Ratio 1: 3: 6	1	10	5	0.25	12.50	Cft
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-						
	6/6	(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-  (1) Type A (nominal mix 1: 1.5: 3) (a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	1	10	4.5	0.5	22.50	Cft
			2	10	0.5	3.5	35.00	Cft
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)						
					2.0 kg/cft		115.00	Kg



Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:3.6) Ratio (1:1.5.3)	1 1	12.50 57.50	0.92 0.84		11.55 48.30 <b>59.85</b>	Cft
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	2	10			20.00	Rft
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	1	10		4	40.00	Sft

## RATE ANALYSIS

## CONSTRUCTION OF DRAIN 2.50'X3.25'

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	150.00	11,558.50	1,733.78
2	C-21/24	Providing and laying sand under and around the sewer pipe, including leveling, manual compaction, complete in all respect.	100 Cft	30.00	3,061.20	918.36
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone (h) Ratio 1: 3: 6	100 Cft	12.50	38,182.80	4,772.85
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-				
		(1) Type A (nominal mix 1: 1.5: 3)	Per Cft	22.50	597.40	13,441.50
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:-				
		(1) Type A (nominal mix 1:1.5:3)	Per Cft	35.00	733.45	25,670.75
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):-				
		('c) Deformed bars (Grade-60)	100 Kg	115.00	35068.45	40,328.72
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	59.85	6,704.50	4,012.64

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	Per Rft	20.00	412.80	8,256.00
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100 Sft	40.00	2,697.05	1,078.82
<b>Total</b>						<b>100,213.42</b>
<b>Rate P/Rft</b>						<b>10,021.34</b>
<b>Say Rs.</b>						<b>10021.00</b>

## RATE ANALYSIS

## CONSTRUCTION OF DRAIN 2'X3.75'

Unit =10'

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1	10	4.50	3.25	146.25	Cft
2	7/30	Supplying and filling sand under floor; or plugging in wells. (20% of excavation)					29.25	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). (h) Ratio 1: 3: 6	1	10	4.5	0.25	11.25	Cft
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-						
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	2	10	0.5	3.5	35.00	Cft
	6/6	(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (1) Type A (nominal mix 1: 1.5: 3)	1	10	4	0.5	20.00	Cft
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)			2.0 kg/cft		110.00	Kg

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)						
		Ratio (1:3.6)	1	11.25	0.92		10.40	
		Ratio (1:1.5.3)	1	55.00	0.84		46.20	
							<b>56.60</b>	
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect.						
		i) 10"wide 6 mm thick	2	10			20.00	Rft
8	13/9	Bitumen coating to plastered or cement concrete surface:-						
		i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	1	10		4	40.00	Sft

## RATE ANALYSIS

## CONSTRUCTION OF DRAIN 2'X3.75'

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	146.25	11,558.50	1,690.43
2	7/30	Supplying and filling sand under floor; or plugging in wells. (Provisional as Slect Fill)	100 Cft	29.25	3,061.20	895.40
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone (h) Ratio 1: 3: 6	100 Cft	11.25	38,182.80	4,295.57
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-				
		(1) Type A (nominal mix 1: 1.5: 3)	Per Cft	20.00	597.40	11,948.00
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:-				
		(1) Type A (nominal mix 1:1.5:3)	Per Cft	35.00	733.45	25,670.75
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):-	100 Kg	110.00	35068.45	38,575.30
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	56.60	6,704.50	3,794.41

## Annexure02 - Annexure-B

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	Per Rft	20.00	412.80	8,256.00
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100 Sft	40.00	2,697.05	1,078.82
<b>Total</b>						<b>96,204.67</b>
<b>Rate P/Rft</b>						<b>9,620.47</b>
<b>Say Rs.</b>						<b>9620.00</b>

## RATE ANALYSIS

## CONSTRUCTION OF DISTRIBUTION CHAMBER

Unit =1

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1	10.25	10.75	3.75	413.20	Cft
2	7/30	Supplying and filling sand under floor; or plugging in wells. (30% of excavation)					123.96	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). (h) Ratio 1: 3: 6	1	8.67	8.75	0.25	18.97	Cft
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-						
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	3	6.25	0.58	3.75	40.78	
			2	7.25	0.58	3.75	31.54	
			1	7.42	7.41	0.58	31.89	
							<b>104.21</b>	
		Deduction	2	3	0.58	2.5	8.70	
						<b>Net</b>	<b>95.51</b>	Cft
	6/6	(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (1) Type A (nominal mix 1: 1.5: 3)	1	8.42	8.42	0.58	41.12	Cft
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)			2.0kg/cft		273.26	Kg



Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:3.6) Ratio (1:1.5.3)	1	18.97	0.92		17.52	Cft
			1	136.63	0.84		114.77	
							<b>132.29</b>	
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect.  i) 10"wide 6 mm thick	2	7.42			14.84	Rft
			3	8.42			25.26	
							<b>40.10</b>	
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	2	8.42		3.58	60.29	Sft
			2	7.42		3.58	53.13	
							<b>113.41</b>	

## RATE ANALYSIS

## CONSTRUCTION OF DISTRIBUTION CHAMBER

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	413.20	11,558.50	4,776.01
2	7/30	Supplying and filling sand under floor; or plugging in wells. (Provisional as Slect Fill)	100 Cft	123.96	3,061.20	3,794.69
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone (h) Ratio 1: 3: 6	100 Cft	18.97	38,182.80	7,241.61
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-				
		(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-				
		(1) Type A (nominal mix 1: 1.5: 3)	Per Cft	41.12	597.40	24,565.04
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	Per Cft	95.51	733.45	70,050.66
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):-				
		('c) Deformed bars (Grade-60)	100 Kg	273.26	35068.45	95,826.88
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	132.29	6,704.50	8,869.52

## Annexure02 - Annexure-B

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	Per Rft	40.10	412.80	16,553.28
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100 Sft	113.41	2,697.05	3,058.84
<b>Total</b>						<b>234,736.52</b>
<b>Say Rs.</b>						<b>234,737.00</b>

## RATE ANALYSIS

## CONSTRUCTION OF OUTFALL SUMP

Unit =1

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1	8.50	8.50	4.00	289.00	Cft
2	7/30	Supplying and filling sand under floor; or plugging in wells. (20% of excavation)					57.80	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). (h) Ratio 1: 3: 6	1	8.80	8.50	0.25	18.70	Cft
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc):- (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-  (1) Type A (nominal mix 1:2:4) (a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:2:4)	1	7.5	7.5	0.5	28.13	Cft
			4	2.5	0.5	4.5	22.50	
			1	6	6	0.5	18.00	
						<b>Total</b>	<b>40.50</b>	Cft
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)						
					2.0 kg/cft		137.25	Kg

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:3.6) Ratio (1:2.4)	1 1	18.70 68.63	0.92 0.88		17.28 60.39 <b>77.67</b>	Cft
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	4	5.5			22.00	Rft
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	4	6		4.5	108.00	
9	N.S	Providing and fixing Flanged M.S Pipe 16" 1/4" thick with 2 coat of epoxy internal and external side	1	50			50.00	
10	C-23/23	Providing and fixing C.I Special such as bend, tee, tail piece, flanged with nut bolt and rubber sheet.  Bend 90°	1	@ wt of 105 kg			105.00	Kg
11	C-23/	Providing and fixing sluice valve of B.S.S. quality and weight, Class 'B', for cast iron pipe line, and Asbestos cement pipe line (including cost of jointing mater 16" i/d (400 mm	1				1.00	Each

## RATE ANALYSIS

## CONSTRUCTION OF OUTFALL SUMP

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	289.00	11,558.50	3,340.41
2	7/30	Supplying and filling sand under floor; or plugging in wells. (Provisional as Slect Fill)	100 Cft	57.80	3,061.20	1,769.37
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone (h) Ratio 1: 3: 6	100 Cft	18.70	38,182.80	7,140.18
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-  (1) Type A (nominal mix 1:2:4) (a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:2:4)	Per Cft	28.13	538.30	15,139.69
			Per Cft	22.50	674.30	15,171.75
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)	100 Kg	137.25	35068.45	48,131.45
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	77.67	6,704.50	5,207.30

## Annexure02 - Annexure-B

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect.				
		i) 10"wide 6 mm thick	Per Rft	22.00	412.80	9,081.60
8	13/9	Bitumen coating to plastered or cement concrete surface:-				
		i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100 Sft	108.00	2,697.05	2,912.81
9	N.S	Providing and fixing Flanged M.S Pipe 16" 1/4" thick with 2 coat of epoxy internal and external side	1 Each	50.00	16,257.00	812,850.00
10	C-23/29b	Providing and fixing C.I Special such as bend, tee, tail piece, flanged with nut bolt and rubber sheet.				
		Bend 90° 15" to 18" (375 to 450 mm) i/d	P Kg	105.00	447.30	46,966.50
11	C-23/31	Providing and fixing sluice valve of B.S.S. quality and weight, Class 'B', for cast iron pipe line, and Asbestos cement pipe line (including cost of jointing mater				
		16" i/d (400 mm	1 Each	1.00	150,697.75	150,697.75

**Total 1,118,408.82**

**Say Rs. 1118409.00**

**DETAILED ESTIMATE**  
**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT**

**RATE ANALYSIS FOR SUPPLYING, LAYING, CUTTING, JOINTING, TESTING AND DISINFECTING M.S PIPE WITH FLANGED**

S. No.	Ref. CSR P/Item	Description	Unit	Quantity	Rate	Amount
1	N.S	Providing of M.S pipe 16" dia, 1/4" thick (Avg. 19.73 kg/Rft.).	1 Rft.	10	10200	102000.00
2	N.S	Providing of M.S Flange 16" dia, 3/4" thick i/c welding with pipe.	1 Each.	2	11061	22122.00
3	N.S	Nut Bolts 5/8"x3" special quality i/c gaskets.	1 Each	24	72	1728.00
4	N.S	Rubber Sheet join / gasket	1 Each	2	312	624.00
5	N.S	Carriage of flanged pipe to site	1 Rft.	10	100	1000.00
6	N.S	Two coat of epoxy paint on outer side complete.  $\frac{1}{3} \times \frac{142}{4} \times \frac{(16.25/12)^2 \times 10}{2} = 42.51 \text{ Sft} \times 2 = 85.03$	1 Sft.	85.03	81.15	6900.18
7	N.S	Laying and jointing/welding of pipe at site complete in all respects.	1 Rft.	10	110	1100.00

**Total:-      Rs.      135474.18**

Add 20% Contractor's Profit + overhead charges.

Rs.      27094.84

**Grand Total:      Rs.      162569.02**  
16256.90

Rate per Rft. = 162569.02/10 = Rs. 16256.90

**Say:-      Rs.      16257.00**



## RATE ANALYSIS

## CONSTRUCTION OF INLET CHAMBER ANAEROBIC POND

Unit =1

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1 1	8.46 6.5	8.46 6.5	5.00 4.00	357.86 169.00	Cft
						<b>Total</b>	<b>526.86</b>	
2	7/30	Supplying and filling sand under floor; or plugging in wells. (30% of excavation)					107.36	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio 1: 3: 6	1 1	7.67 6.5	7.67 6.5	0.25 0.25	14.71 10.56	
						<b>Total</b>	<b>25.27</b>	
		Ratio 1: 2: 4					17.85	
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-						
	6/6	(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-						
		(1) Type A (nominal mix 1: 1.5: 3)	1 6 1	7.17 6 5.5	7.17 6 5.5	1.5 0.83 0.5	77.11 29.88 15.13	
						<b>Total</b>	<b>122.12</b>	
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	1 2 1 1 1 1 1 1	4.67 4.67 4.67 25 25 1.5 5.34	0.67 0.67 0.67 0.83 2.27 1.5 2.67	6.25 6.25 3.25 1.33 0.68 8.83 0.58	19.56 39.11 10.17 27.60 38.59 19.87 8.27	
							<b>163.16</b>	
		Deduction	1	2.50	0.67	2.50	4.19	
						<b>Net</b>	<b>158.97</b>	

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):-			3.0kg/cft		843.27	Kg
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1)						
		Ratio (1:3.6)	1	25.27	0.92		23.35	
		Ratio (1:1.5.3)	1	281.09	0.84		236.12	
		Ratio (1:2.4)	1	17.85	0.88		15.71	
							<b>275.17</b>	Cft
7	C-23/43d	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-100) working pressure pipe, Beta/ Dadex/ Popular/ IIL or equivalent including the cost of specials, in trenches, as approved & directed by the engineer incharge, complete in all respects PN-8						
		355mm	1	25			25.00	Rft
8	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect.						
		i) 10"wide 6 mm thick	4	4.67			18.68	Rft
9	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	4	4.67		5.00	93.40	Sft

## RATE ANALYSIS

## CONSTRUCTION OF INLET CHAMBER ANAEROBIC POND

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	526.86	11,558.50	6,089.69
2	7/30	Supplying and filling sand under floor; or plugging in wells. (Provisional as Slect Fill)	100 Cft	107.36	3,061.20	3,286.42
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone Ratio 1:3:6 Ratio 1:2:4	100 Cft 100 Cft	25.27 17.85	38,182.80 43,837.20	9,648.69 7,824.94
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-				
		(1) Type A (nominal mix 1: 1.5: 3)	Per Cft	122.12	597.40	72,953.50
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	Per Cft	158.97	733.45	116,598.62
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):-	100 Kg	843.27	35068.45	295,722.95
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	275.17	6,704.50	18,449.03

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
7	C-23/43d	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-100) working pressure pipe, Beta/ Dadex/ Popular/ IIL or equivalent including the cost of specials, in trenches, as approved & directed by the engineer incharge, complete in all respects				
		355mm	Rft	25.00	7,120.15	178,003.75
8	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect.				
		i) 10"wide 6 mm thick	Per Rft	18.68	412.80	7,711.10
9	13/9	Bitumen coating to plastered or cement concrete surface:-				
		i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100 Sft	93.40	2,697.05	2,519.04
<b>Total</b>						<b>718,807.74</b>
<b>Say Rs.</b>						<b>718,808.00</b>

## RATE ANALYSIS

## CONSTRUCTION OF OUTLET CHAMBER ANAEROBIC POND

Unit =1

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1	8.46	8.46	5.00	357.86	
			1	6.5	6.5	4.00	169.00	
						<b>Total</b>	<b>526.86</b>	Cft
2	7/30	Supplying and filling sand under floor; or plugging in wells. (30% of excavation)					107.36	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate).  Ratio 1: 3: 6	1	7.67	7.67	0.25	14.71	
			1	6.5	6.5	0.25	10.56	
						<b>Total</b>	<b>25.27</b>	
		Ratio 1: 2: 4					17.85	
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-(  (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-  (1) Type A (nominal mix 1: 1.5: 3)	1	7.17	7.17	1.5	77.11	
			1	6	6	0.83	29.88	
			1	5.5	5.5	0.5	15.13	
						<b>Total</b>	<b>122.12</b>	
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	1	4.67	0.67	6.25	19.56	
			2	4.67	0.67	6.25	39.11	
			1	4.67	0.67	3.25	10.17	
			1	27	0.83	1.33	29.81	
			1	27	2.27	0.68	41.68	
			1	1.5	1.5	10.83	24.37	
			1	5.34	2.67	0.58	8.27	
							<b>172.96</b>	
		Deduction	1	2.50	0.67	2.50	4.19	



Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)			3.0kg/cft		872.66	Kg
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:3.6) Ratio (1:1.5.3) Ratio (1:2.4)	1 1 1	25.27 290.89 17.85	0.92 0.84 0.88		23.35 244.34 15.71 <b>283.40</b>	Cft
7	C-23/43d	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-100) working pressure pipe, Beta/ Dadex/ Popular/ IIL or equivalent including the cost of specials, in trenches, as approved & directed by the engineer incharge, complete in all respects PN-8 355mm	1	27			27.00	Rft
8	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	4	4.67			18.68	Rft
9	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	4	4.67		5.00	93.40	Sft

## RATE ANALYSIS

## CONSTRUCTION OF OUTLET CHAMBER ANAEROBIC POND

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	526.86	11,558.50	6,089.69
2	7/30	Supplying and filling sand under floor; or plugging in wells. (Provisional as Slect Fill)	100 Cft	107.36	3,061.20	3,286.42
3	6/5	compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio 1:3:6 Ratio 1:2:4	100 Cft 100 Cft	25.27 17.85	38,182.80 43,837.20	9,648.69 7,824.94
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-( (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (1) Type A (nominal mix 1: 1.5: 3) (a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	Per Cft Per Cft	122.12 168.77	597.40 733.45	72,953.50 123,782.76
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)	100 Kg	872.66	35068.45	306,027.82
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	283.40	6,704.50	19,000.66



Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
7	C-23/43d	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-100) working pressure pipe, Beta/ Dadex/ Popular/ IIL or equivalent including the cost of specials, in trenches, as approved & directed by the engineer incharge, complete in all respects 355mm	Rft	27.00	7,120.15	192,244.05
8	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	Per Rft	18.68	412.80	7,711.10
9	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100 Sft	93.40	2,697.05	2,519.04
<b>Total</b>						<b>751,088.68</b>
<b>Say Rs.</b>						<b>751,089.00</b>

## RATE ANALYSIS

## CONSTRUCTION OF INLET CHAMBER OF FACULTATIVE POND

Unit =1

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1	8.46	8.46	5.00	357.86	Cft
			1	6.5	6.5	4.00 <b>Total</b>	169.00 <b>526.86</b>	
2	7/30	Supplying and filling sand under floor; or plugging in wells. (30% of excavation)					107.36	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate).						
		Ratio 1: 3: 6	1	7.67	7.67	0.25	14.71	
			1	6.5	6.5	0.25 <b>Total</b>	10.56 <b>25.27</b>	
		Ratio 1: 2: 4					17.85	
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-						
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	1	4.67	0.67	6.25	19.56	
			2	4.67	0.67	6.25	39.11	
			1	4.67	0.67	3.25	10.17	
			1	22	0.83	1.00	18.26	
			1	22	2.27	0.68	33.96	
			1	1.5	1.5	7	15.75	
			1	5.34	2.67	0.58	8.27	
							<b>145.07</b>	
		Deduction	1	2.50	0.67	2.50	4.19	
						<b>Net</b>	<b>140.89</b>	
		(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:-						
		(1) Type A (nominal mix 1: 1.5: 3)	1	7.17	7.17	1.5	77.11	
			1	6	6	0.83	29.88	
			1	5.5	5.5	0.5	15.13	
						<b>Total</b>	<b>122.12</b>	

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)			3.0kg/cft		789.02	Kg
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:3.6) Ratio (1:1.5.3) Ratio (1:2.4)	1 1 1	25.27 263.01 17.85	0.92 0.84 0.88		23.35 220.92 15.71 <b>259.98</b>	Cft
7	C-23/43d	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-100) working pressure pipe, Beta/ Dadex/ Popular/ IIL or equivalent including the cost of specials, in trenches, as approved & directed by the engineer incharge, complete in all respects PN-8 355mm	1	22			22.00	Rft
8	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	4	4.67			18.68	Rft
9	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	4	4.67		5.00	93.40	Sft

## RATE ANALYSIS

## CONSTRUCTION OF INLET CHAMBER OF FACULTATIVE POND

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	526.86	11,558.50	6,089.69
2	7/30	Supplying and filling sand under floor; or plugging in wells. (Provisional as Slect Fill)	100 Cft	107.36	3,061.20	3,286.42
3	6/5	compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio 1:3:6 Ratio 1:2:4	100 Cft 100 Cft	25.27 17.85	38,182.80 43,837.20	9,648.69 7,824.94
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (1) Type A (nominal mix 1: 1.5: 3)  (a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	Per Cft  Per Cft	122.12  140.89	597.40  733.45	72,953.50  103,333.59
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)	100 Kg	789.02	35068.45	276,695.72
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	259.98	6,704.50	17,430.48

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
7	C-23/43d	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE-100) working pressure pipe, Beta/ Dadex/ Popular/ IIL or equivalent including the cost of specials, in trenches, as approved & directed by the engineer incharge, complete in all respects 355mm	Rft	22.00	7,120.15	156,643.30
8	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	Per Rft	18.68	412.80	7,711.10
9	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100 Sft	93.40	2,697.05	2,519.04
<b>Total</b>						<b>664,136.48</b>
<b>Say Rs.</b>						<b>664,136.00</b>

## RATE ANALYSIS

## CONSTRUCTION OF OUTLET CHAMBER OF FACULTATIVE POND

Unit =1

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pining of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1	9.67	7.84	5.00	379.06	Cft
2	7/30	Supplying and filling sand under floor; or plugging in wells. (30% of excavation)					113.72	Cft
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio 1: 3: 6	1	8.84	6.84	0.25	15.12	Cft
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-						
	6/6	(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (1) Type A (nominal mix 1: 1.5: 3)	1	8.34	6.34	0.58	30.67	Cft
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	2	5.67	0.67	6.00	45.59	
			1	6.67	0.67	1.67	7.46	
			1	6.67	0.67	6.00	26.81	
			1	7.34	2.67	0.58	11.37	
							<b>91.23</b>	
		Deduction	1	2.50	0.67	2.50	4.19	
						<b>Net</b>	<b>87.04</b>	

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)			3.0kg/cft		353.13	Kg
6	C-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. (Ch.No. 1, Item.No. 1) Ratio (1:3.6) Ratio (1:1.5.3)	1 1	15.12 117.71	0.92 0.84		13.97 98.88 <b>112.84</b>	Cft
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect.  i) 10"wide 6 mm thick	2 2	6.67 4.67			13.34 9.34 <b>22.68</b>	Rft
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	1 2	7.34 5.34		6.08 6.08	44.63 64.93 <b>109.56</b>	Sft

## RATE ANALYSIS

## CONSTRUCTION OF OUTLET CHAMBER OF FACULTATIVE POND

Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
1	C-3/7	Earthwork excavation in open cutting upto 1.5m depth for storm water channels, drains, sullage drains, in open areas, roads, streets, lanes, including under pinning of walls and shoring to protect existing works, shuttering and timbering the trenches, dressed to designed levels and dimensions, trimming, removal of surface water from trenches, backfilling and surplus excavated material disposed of and dressed within 15m lead:-	1000 Cft	379.06	11,558.50	4,381.41
2	7/30	Supplying and filling sand under floor; or plugging in wells. (Provisional as Slect Fill)	100 Cft	113.72	3,061.20	3,481.17
3	6/5	compacting, finishing and curing complete (including screening and washing of stone aggregate). Ratio 1: 3: 6	100 Cft	15.12	38,182.80	5,771.86
4	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-				
		(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and footing beams, other structural members other than those mentioned in 6(a) (i)& (ii) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (1) Type A (nominal mix 1: 1.5: 3)	Per Cft	30.67	597.40	18,320.97
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (1) Type A (nominal mix 1:1.5:3)	Per Cft	87.04	733.45	63,841.31
5	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)	100 Kg	353.13	35068.45	123,837.57
6	1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl , kankar lime (unslaked), surkhi , etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (95km)	100 Cft	112.84	6,704.50	7,565.64



Sr. No.	Ref. CSR	Description	Unit	Quantity	Rate (Rs)	Amount (Rs)
7	6/31A	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. i) 10"wide 6 mm thick	Per Rft	22.68	412.80	9,362.30
8	13/9	Bitumen coating to plastered or cement concrete surface:- i) 20 lbs. per 100 Sft. (9.07 Kg per Sq.m)	100 Sft	109.56	2,697.05	2,954.93
<b>Total</b>						<b>239,517.18</b>
<b>Say Rs.</b>						<b>239,517.00</b>

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**Sub Head # B.2: Inlet/Outlet Channels & Collection/ Distribution Chambers (MRS)**

ITEM NO.	NON MRS	DESCRIPTION	UNIT	QUANTIT Y	UNIT RATE	AMOUNT
					(Rs)	(Rs)
1	RA-04	Providing and fixing manual and gear operated C.I penstock gate B.S.S 7775 of verious size with CI shutter and CI frame channel with interior brass channel on bottom and two sides through which gate travels i/c non-magnetic SS spindle with square thread CI head stock and wheel etc complete in all respect as per drawing and/or directed by the engineer incharge.				
		Penstock Gate Size 2.50' x 2.25' Clear Opening	Each	10.00	343,750.00	3,437,500
		Penstock Gate Size 2.0' x 2.25' Clear Opening	Each	26.00	261,000.00	6,786,000
Total Amount Non MRS Items						10,223,500

**Say Rs. 10.22  
Million**

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER  
TREATMENT PLANT (WWTP) GOJRA CITY**

**Sub Head # B.2: Inlet/Outlet Channels & Collection/ Distribution Chambers (MRS)**

Sr.#	Chap # / Item #	Description	No.	Measurement			Qty	Unit
				L	W	D		
1	RA-04	Providing and fixing manual and gear operated C.I penstock gate B.S.S 7775 of various size with CI shutter and CI frame channel with interior brass channel on bottom and two sides through which gate travels i/c non-magnetic SS spindle with square thread CI head stock and wheel etc complete in all respect as per drawing and/or directed by the engineer incharge.						
		Penstock Gate Size 2.50' x 2.25' Clear Opening	10.00				10.00	Each
		Penstock Gate Size 2.0' x 2.25' Clear Opening	26.00				26.00	Each

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**Sub Head # C: Supply and Installation of 50 KVA Transformer.**

Sr.#	Description	Unit	Qty.	Rate	Amount
1	Supply, insatllation, commissioning and testing of oil cooled type, Step down Power Transformer of specified rating,11/0.415 kV, i/c the cost of lifting hooks, thermometers, LT & HT bushing 5-steps, tap changer, imported double float buchholz relay, 2 earthing terminals, roller wheels, connecting terminals for cables M.S box on transformer in order to cover complete L.T side, all necessary materials required for connections on H.T & L.T side, rated voltage 11000/415/240 V impedance 6.25% or as specified by WAPDA/IEC system earth: Delta / Star, neutral solidly earthed, i/c Wapda testing charges,complete in all respects made of PEL, Siemens, as approved and directed by the Engineer Incharge (C-24/105)	Each	1	1,020,128.40	1020128.40
2	FESCO Connection charges				1000000.00

Total:- **2,020,128.40**

**Say Rs. 2.02  
Million**

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP)**  
**GOJRA CITY**

**Sub Head # D: Office Building**

SR. NO.	MRS 1st Bi-Annual 2023 (Chap/Item)	DESCRIPTION	UNIT	QUANTIT Y	UNIT RATE	AMOUNT
					(Rs)	(Rs)
1	3/21	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling in layers around structure with excavated earth, watering and ramming lead upto one chain (30 m)lift upto 5 ft (1.5m) i) By Manual ii) Ordinary soil	1000 Cft	10.92	13669.90	149,275.31
2	26/43	Spraying termite proofing by using liquid FMC/ Biflex/ Terminix Exin/ Ms Hextar or equivalent @ specified suspension concentrate (SC), Mixing Ability- HEXSTAR with Ratio (1:250) =540 Sft or equivalent approved liquid applying with shower and certificate will be provided by the contractor for 10- years complete in all respect. as approved by the Engineer Incharge	Sft	7,139.56	11.95	85,317.74
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate). (f) Nominal mix Ratio 1: 2: 4 (h) Nominal mix Ratio 1: 3: 6	100 Cft 100 Cft	0.63 3.50	43837.20 38182.80	27,617.44 133,639.80
4	7/4	Pacca brick work in foundation and plinth i) Cement, sand mortar Ratio 1 : 3	100 Cft	11.55	34,119.45	394,079.65
5	6/36	Providing and laying damp proof course of cement concrete 1:2:4 (cement, sand, shingle), including bitumen coating. (b) with 2 coats of bitumen: i) 1½" thick (40 mm)	100 Sft	2.83	11,126.15	31,487.00
6	6/37	Providing and laying vertical damp proof course with cement sand plaster and bitumen coating:- (a) with one coat of bitumen and one coat of polythene sheet 500 gauge: ii) Ratio 1:3 b) ¾" thick (20 mm)	100 Sft	2.33	7,997.25	18,633.59
7	7/5	Pacca brick work in ground floor:- i) cement, sand mortar Ratio 1:3	100 Cft	19.61	36,912.60	723,856.09
8	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand and screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):  (a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and other structural members other than those mentioned in 5(a) (i) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (2) Type B (nominal mix 1: 1½: 3)	Per Cft	562.18	597.40	335,846.33
		(a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (2) Type B (nominal mix 1: 1½: 3)	Per Cft	734.24	733.45	538,528.33

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP)**  
**GOJRA CITY**

**Sub Head # D: Office Building**

SR. NO.	MRS 1st Bi-Annual 2023 (Chap/Item)	DESCRIPTION	UNIT	QUANTIT Y	UNIT RATE	AMOUNT
					(Rs)	(Rs)
9	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)	100 Kg	29.41	35,068.45	1,031,363.11
10	Chap-1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (130km)	100 Cft	14.66	6,704.50	98,287.97
11	11/9	Cement plaster 1:4 upto 20' (6.00 m) height:- a) 3/8" (10 mm) thick	100 Sft	40.63	3,717.25	151,031.87
12	11/10	Cement plaster 3/8" (10 mm) thick under soffit of R.C.C. roof slabs only, upto 20' height. c) 1:4	100 Sft	13.68	4,401.25	60,209.10
13	3/15	Filling, watering and ramming earth under floors:- (i) with surplus earth from foundation, etc. (ii) with new earth excavated from out side, lead upto one chain (30m)	1000 Cft	1.27	6526.10	8,288.15
			1000 cft	0.35	14,037.85	4,913.25
14	3/16	Extra for every 50 ft. (15 m) additional lead or part thereof i) for earth work soft, ordinary, hard and very hard (up to 1000 ft)	1000 cft	7.00	2,036.00	14,252.00
15	7/30	Supplying and filling sand under floor; or plugging in wells. (Provisional as Slect Fill)	100 Cft	50.39	3,061.20	154,253.87
16	6/2	Dry rammed brick or stone ballast, 1½" to 2" (40 mm to 50 mm) gauge.	100 Cft	1.35	11008.80	14,861.88
17	Oct-43	Providing and laying superb quality Porcelain glazed tiles flooring of MASTER brand of specified size in approved design, Color and Shade with adhesive/bond over 3/4" thick (1:3) cement plaster i/c the cost of sealer for finishing the joints i/c cutting grinding complete in all respect as approved and directed by the Engineer Incharge.  a) Full body Glazed tiles (ii) 600mmx 600 mm	Per Sft	375.07	441.75	165,687.17
18	C-10/44	Providing and laying superb quality Porcelain glazed tiles of Master brand, skirting/dado of specified size, Color and Shade with adhesive / bond over 1/2" thick (1:2) cement plaster i/c the cost of and sealer for finishing the joints, cutting grinding complete in all respect as approved and directed by the Engineer Incharge.  a) Full body Glazed Tile (ii) 600mm x600 mm	Per Sft	255.19	441.75	112,730.18
20	9/5	Single layer of tiles 225 x 113 x 40 mm laid over 100mm earth and 25mm mud plaster without bhoosa grouted with cement sand 1:3 on top of RCC roof slab provided with 1.72kg/sq.m bitumen coating sand blinded	100 Sft	12.94	12818.25	165,868.16
21	26/37	Supplying and laying polythene sheet over D.P.C under floors and on roofs, etc. ( i ) 300 gauge (0.003" thick)	Per Sft	1,294.00	7.80	10,093.20

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP)**  
**GOJRA CITY**

**Sub Head # D: Office Building**

SR. NO.	MRS 1st Bi-Annual 2023 (Chap/Item)	DESCRIPTION	UNIT	QUANTIT Y	UNIT RATE	AMOUNT
					(Rs)	(Rs)
22	9/15	Khuras on roof 2'x2'x6" (600 x 600 x 150mm)	Each	1.00	1036.65	1,036.65
23	9/16	Bottom Khuras of brick masonry in cement mortar 1:6, 4'x2'x4½" (1200x600x113 mm) over 3" (75 mm) cement concrete 1:4:8.	Each	1.00	2,065.65	2,065.65
24	C-10/7	Dry brick on edge paving, sand grouted, including preparation of bed by watering, ramming & bringing the same to proper camber, by ½" (13 mm) thick mud plaster.	100 Sft	0.50	10,794.00	5,397.00
25	C-10/8	Grouting 4½" (113 mm) dry brick work with cement mortar ratio 1: 5	100 Sft	0.50	3,183.25	1,591.63
26	12/64	Providing and fixing 1-1/2" thick G.I sheet forged door comprising of G.I pressed double skin pannelled sheet of 22 SWG in specified width of rails, Styles and panels pressed on both sides of fillet (Honey Comb paper), dully fixed in chowkat with Archtrative on one side, with heavy duty 4 No. steel hinges i/c M.S Tower bolt 9" long, M.S Sliding bolt 12" long, Rowel bolt for Hold Fast, duly powder coated paint and punching of required holes as approved and directed by the Engineer Incharge .	Per Sft	28.00	2,195.40	61,471.20
27	12/61	Providing and fixing sliding bolt to doors:- iii) brass sliding bolt, 10" (250 mm) long	Each	5.00	986.80	4,934.00
28	12/50(i)	Providing and fixing 1½" (40 mm) thick hollow flush doors and windows with commercial ply (3 ply) on both faces of deodar wood shutter frame 1¼" (30 mm) thick and partial wood braces at about 3" (75 mm) apart and deodar wood lipping 1½"x3/8" (40 mmx10 mm) fixed with M.S. chowkat (frame) including chromium plated fittings, etc. complete in all respects (without sliding bolt or lock):-	Per Sft	112.00	2,015.90	225,780.80
29	12/17	Providing and fixing 2" wide MS/ GI Chowkat single/double rebate made of 16 SWG MS sheet pressed/ welded/ supported with M.S. flat 1- 1/4"x1/8" i/c 6"long M.S. Flat 1"x1/8"hold fasts (6-Nos) welded/ screwed, punching of lock hole covered with MS Box,coating with antirust paint including filling with cement sand mortar (1:8) and embedding hold fast in cement concrete (1:2:4) ,complete in all respect as approved and directed by Engineer Incharge.	Per Sft	112.00	733.40	82,140.80
28	13/5 (C i+ii)	(ii) 10.50 " wide Painting new surface:- c) Preparing surface and painting of doors and windows any type (including edges):- i) priming coat. ii) each subsequent coat of paint. (2 coats)	100 Sft	2.24	3,322.50	7,442.40
29	25/52	Providing and fitting all types of glazed aluminium windows of anodised bronze colour partly fixed and partly sliding using delux sections of approved manufacturer having frame size of 100 x 30 mm (4"x¾") and leaf frame sections of 50 x 20 mm (2"x¾"), all of 1.6mm thickness including 5 mm thick imported tinted glass with rubber gasket using pproved standard latches, hardware etc., as approved by the Engineer in-charge.	Per Sft	96.00	1,488.65	142,910.40
30	25/58	Providing and fixing M.S. flat ½"x1/8" (13mm x 3mm) grill including ¾" x 1/8" (20 mmx3 mm) M.S. flat frame, in windows of approved design, including painting three coats, complete in all respects.	Per Sft	96.00	626.95	60,187.20
31	11/22	Priming coat of chalk under distemper.	100 Sft	27.21	348.00	9,469.08

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP)**  
**GOJRA CITY**

## Sub Head # D: Office Building

SR. NO.	MRS 1st Bi-Annual 2023 (Chap/Item)	DESCRIPTION	UNIT	QUANTIT Y	UNIT RATE	AMOUNT
					(Rs)	(Rs)
32	11/23	Distempering ( a ) new surface ii) two coats	100 Sft	27.21	1309.90	35,642.38
33	11/18	Cement pointing struck joints, on walls, upto 20' (6.00 m) hieght:- (external wall) a) ratio 1:2	100 Sft	11.31	4305.60	48,696.34
34	19/7	<b>PLUMBING WORKS</b> Providing and fitting glazed earthen ware wash hand basin 56x40cm, including bracket set, waste pipe and waste coupling, etc ii) coloured, with pedestal	Each	1.00	9573.90	9,573.90
35	19/8	Providing and fixing stainless steel sink withdrain board, size 120x60 cm (48"x24") including bracket set, waste pipe and waste coupling.	Each	1.00	11750.65	11,750.65
36	19/29	Providing and fixing chromium plated shower rose:- ii) 2x15 cm (¾"x6")	Each	1.00	1,990.40	1,990.40
37	19/30	Providing and fixing, chromium plated mixing valve, for wash hand basin, sink or shower.	Each	3.00	3,688.00	11,064.00
38	23/23	Providing, laying, cutting, jointing, testing and disinfecting G.I. pipe line in trenches, with socket joints, using G.I pipes of B.S.S. 1387-1967complete in all respects with specials and valves:- ii) Medium Quality b) ¾" i/d (20 mm) 2.65mm thick c) 1" i/d (25 mm) 3.25mm thick	Per Rft Per Rft	20.00 20.00	298.50 449.75	5,970.00 8,995.00
39	19/4	Providing and fitting glazed earthen ware water closet, squatter type, combined with foot rest. ii) coloured	Each	1.00	3609.85	3,609.85
40	19/13	Providing and fitting plastic made low down flushing cistern 1363 liters (3 gallons) capacity, including bracket set, copper connection etc., complete. ii) coloured	Each	1.00	4,550.55	4,550.55
41	19/20	Providing and fixing looking glass 55x40 cm size and 5mm thick, first quality	Each	1.00	1242.00	1,242.00
42	19/23	Providing and fitting i) Plastic Soap Dish ii) Plastic toilet paper holder iii) Plastic towel rail iv) Plastic shelf 60X13cm with bracket and railing	Each Each Each Each	1.00 1.00 1.00 1.00	1,380.00 1035.00 1,610.00 1035.00	1,380.00 1,035.00 1,610.00 1,035.00
43	19/27	Providing and fixing chromium plated bib cock i) 2 cm (¾")	Each	4.00	1,630.40	6,521.60
44	19/49	Providing, fixing, testing and commissioning of µ-PVC (Unplasticized polyvinyl Chloride)Nikasi/ waste pipe Fittings make of Dadex/Popular/Beta or equivalent, conforming to code EN-1329 including the cost of Solvents complete in all respect as approved and directed by the Engineer Incharge. b) Multi-Trap (i) 4" dia	Each	2.00	1,243.20	2,486.40
45	19/36	Providing and fitting gully trap, including cement concrete, cost of PVC grating 15x15cm and masonry chamber 30x30cm.	Each	2.00	1,493.65	2,987.30



**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP)**  
**GOJRA CITY**

Sub Head # D: Office Building

SR. NO.	MRS 1st Bi-Annual 2023 (Chap/Item)	DESCRIPTION	UNIT	QUANTIT Y	UNIT RATE	AMOUNT
					(Rs)	(Rs)
46	23/47	Providing, laying, testing and commissioning of POLYPROPYLENE RANDOM COPOLYMER (PPRC) watersupply pipe (Dadex/ Popular/ Beta orequivalent)with specified pressure rating PN(PRESSURE NOMINAL) and conforming to DIN 8077-8078 code i/c cost of solvent, specials, making jharries complete in all respect as approved and directed by Engineer Incharge. (Internal/External Diameters mentioned). c) PN-25 pipe  Diameters mentioned). c) <b>PN-25 pipe</b> (ii) (5/8") 25 mm (iii) (3/4") 32 mm	Per Rft Per Rft	70.40 16.00	151.80 242.55	10,686.72 3,880.80
47	19/47	Providing, fixing, testing and commissioning of µ-PVC (Unplasticized Polyvinyl Chloride) Nikasi/ waste pipe make of Dadex/ Popular/ Beta or equivalent, plain/ socket ended conforming to code EN-1329 of specified SDR (Standard Dimension Ratio) including the cost of specials and Solvents complete in all respect as approved and directed by the Engineer Incharge. <b>Type (SDR 32.5/SN 8)</b>  (iv) 3"(85 mm ) (v) 4"(110 mm) (vi) 6"(160 mm)	Per Rft Per Rft Per Rft	20.00 12.00 15.00	182.75 306.10 450.00	3,655.00 3,673.20 6,750.00
48	19/49	Providing, fixing, testing and commissioning of µ-PVC (Unplasticized polyvinyl Chloride) Nikasi/ waste pipe Fittings make of Dadex/ Popular/ Beta or equivalent, conforming to code EN-1329 including the cost of Solvents complete in all respect as approved and directed by the Engineer Incharge. <b>a) P-Trap</b> (i) 4" dia	Each	1.00	1,293.60	1,293.60
<b>Total Amount MRS Item (Civil Works) (A)</b>						<b>5,224,627.67</b>
<b>Total Amount MRS Item (Electrical Item (b)</b>						<b>327,111.00</b>
<b>Total Amount Non MRS Item</b>						<b>370,826.00</b>
						<b>5,922,564.67</b>

Say Rs. **5.92**  
**Million**

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**Sub Head # D-1: Office Building**

SR. NO.	MRS 1st Bi-Annual 2023 (Chap/Item)	DESCRIPTION	QUANTITY	UNIT	UNIT RATE	AMOUNT
					(Rs)	(Rs)
<b>1.0</b>		<b><u>WIRING AND ACCESSORIES</u></b>				
1.1	10(a-ii)/24, 3(iii)/24, 14(i)/24, 32(ii)/24	Wiring of light or fan point from switch to the point with 7/0.74 mm mm (3/0.029") PVC insulated single core cables in PVC pipes concealed in walls, columns and slabs including accessories, PVC box, 10 Amp. gang switch 1 or 2 way as required, one for each light or fan and installed as in specifications.	16.00	Each	2,244.00	35,904.00
1.2	10(a-iii)/24, 3(iii)/24	Circuit wiring from MCBs board to gang switches board with 3x7/0.74 mm (7/0.029") PVC insulated single core cables in appropriate size PVC conduit.	5.00	Each	7,013.00	35,065.00
1.3	10(a-ii)/24, 3(iii)/24	The same as item No. 1.1 but from one light point to another light point.	12.00	Each	1,852.00	22,224.00
1.4	10(a-iv)/24, 14(ii)/24, 36(i)/24, 3(iii)/24	5 Amp 2/3 pin universal flush mounting switch socket unit away from switch board and wired with 3x7/0.91mm (7/0.036") single core cable from nearest circuit available in PVC concealed conduits or trunking including all conduit accessories as required complete in all respect.	4.00	Each	8,850.00	35,400.00
1.5	10(a-iii)/24, 3(iii)/24	The same as item No.1.4 but wiring from one socket to another socket with 3x7/0.74 mm (7/0.029") single core cable	4.00	Each	5,212.00	20,848.00
1.6	10(a-v)/24, 3(iii)/24, 36(ii)/24, 14(ii)/24	The same as item No. 1.4 but wiring of 15/20A, 3-pin flush mounting switch socket unit wired with 3x7/1.12mm (7/0.044") single core cable wires starting from D.B.	4.00	Each	10,965.00	43,860.00
<b>2.0</b>		<b><u>Power Cables</u></b>				
2.1		Supply and erection of copper conductor cables for service connection, in prelaidd pipe/G.I. wire/trenches, etc. (rate for cable only) PVC insulated, PVC sheathed 4 core, 600/1000 volt non armoured cable				
(a)	C-24/13 c vi	10 mm (7/0.052")	100.00	Rft.	935.85	93,585.00
2.2		Supply and erection of single core PVC insulated copper conductor cables, in prelaidd PVC pipe/M.S. conduit/G.I pipe/wooden strip batten / wooden casing an capping / G.I. wire / trenches (rate for cables only) 450/750 volts, PVC insulated:				
(a)	C-24/10 c vi	10 mm sq (7/0.052")	100.00	Rft.	179.85	17,985.00
<b>3.0</b>		<b><u>Conduits / Pipes</u></b>				
3.1(a)	11(b)/23	PVC pipe/conduit Class-B 100 mm dia with accessories suitable for laying multi-core cables from pole to pole in trenches/directly burried including excavation.	80	Rft.	278	22,240.00
<b>Total Amount MRS Item (Electrical Works) (B)</b>						<b>327,111.00</b>
<b>Total Amount (MRS Item) (A+B)</b>						
						<b>Say Rs. 0.33 Million</b>

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**Sub Head # D-2: Office Building**

SR. NO	NON MRS	DESCRIPTION	QUANTITY	UNIT	RATE (Rs)	AMOUNT (Rs)
	RA-09	Supply, transportation at site, storage, installation, testing and commissioning of the following items of work (unless specifically stated otherwise) including all material, labour, tools and accessories etc. required for proper completion of each item as per specification and drawings and/or as directed by the Engineer.				
1.0		<b>LIGHT FITTINGS AND FANS</b>				
1.1		Following LED Luminaries of suitable wattage make Philips, GE, Pierlite or approved equivalent suitable for the project requirements. Contractor to submit lighting design calculation to determine the adequacy of the wattage and should adjust the number of LEDs/wattage as per project lighting requirements. The fitting shall be approved by the Engineer.				
(a)		Light Fixture Type LED Batten surface mounted, 18W complete in all respect with allied accessories make Philips, GE, Pierlite or approved equivalent. The fitting shall be approved by the Engineer.	8.00	Each	3,328	26,624
(b)		Light Fixture Type LED Batten surface mounted, 10W above mirror in toilets complete in all respect with allied accessories make Philips, GE, Pierlite or approved equivalent. The fitting shall be approved by the Engineer.	1.00	Each	2,341	2,341
1.2		Wall bracket Light Fixture Type LED 6W energy saving lamp with holder and complete in all respect with allied accessories make Philips, GE, Pierlite or approved equivalent. The fitting shall be approved by the Engineer.	8.00	Each	3,465	27,720
1.3		20W LED Water tight light fixture IP 65 complete in all respect with all allied accessories or approved equivalent. The fitting shall be approved by the Engineer.	6.00	Each	19,611	117,666
1.4		Light Fixture Type LED surface mounted down lighter, 6W complete in all respect with allied accessories make Philips, GE, Pierlite or approved equivalent. The fitting shall be approved by the Engineer.	1.00	Each	2,769	2,769
1.5		56" ceiling fan sweep (Climax, Pak, Millat) make or approved equivalent.	2.00	Each	9,420	18,840
1.6		Wall Bracket fan 20" sweep make (Royal, Pak, GFC or approved equivalent) capacitor type, copper winding complete with all required accessories etc.	2.00	Each	12,401	24,802
1.7		Exhaust fan 12" sweep make (Royal, Pak, Millat or approved equivalent) capacitor type, copper winding complete with Plastic body and all accessories etc.	2.00	Each	6,315	12,630
2.0		<b>DISTRIBUTION BOARDS</b> D.Bs with TP incoming adjustable moulded case circuit breaker and SP miniature outgoing circuit breakers, Panel box SWG 16 powder coated RAL colour 7032, IP class 44 and with all accessories. alongwith all installation and operational accessories as per specification or as shown on the drawings.				
2.1		<b>D B- Operator Quarter</b> <b>MATERIAL</b> 01 No. 32 Amps (Adj.) MCCB TP, RC=25kA, Icu 06 No. outgoing 10A, MCB, SP, RC=10kA, Icu=100%Ics 03 Nos. outgoing 20A, MCB, SP, RC=10kA, Icu=100%Ics 03 Nos. Spare 10/20A, MCB, SP, RC=10kA, Icu=100%Ics 02 Nos. Space for 10/20A, MCB Indication lights, push buttons, digital ammeter with selector switch, digital voltmeter with selector switch, Panel box SWG 16 powder coated RAL colour 7032, IP class 44 and with all accessories.	1.00	Each	80,890	80,890
3.0		<b>EARTHING AND BONDING</b> Earth point comprising of 10 ft. 5/8" dia. (16 mm dia) copper coated M.S. rods driven in ground. The earthing rods shall be completed with fixing clamps etc.	2.00	No.	28,272	56,544
		<b>Total Amount NON MRS Items</b>				<b>370,826</b>

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

**Sub Head # E: Staff Building**

SR. NO.	MRS 2nd Bi-Annual 2023 (Chap/Item)	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1	3/21	Excavation in foundation of building, bridges and other structures, including dagbelling, dressing, refilling in layers around structure with excavated earth, watering and ramming lead upto one chain (30 m) lift upto 5 ft (1.5m)				
		1) By Manual ii) Ordinary soil	4.21	1000 Cft.	13669.90	57,550.28
2	26/43	Spraying termite proofing by using liquid FMC/ Biflex/ Terminex Exin/ Ms Hextar or equivalent @ specified suspension concentrate (SC), Mixing Ability HEXSTAR with Ratio (1:250) = 540 Sft or equivalent approved liquid applying with shower and certificate will be provided by the contractor for 10-years complete in all respect. as approved by the Engineer Incharge	3,073.55	Sft	11.95	36,728.92
3	6/5	Cement concrete plain including placing, compacting, finishing and curing complete (including screening and washing of stone aggregate).				
	0.88	(f) Nominal mix Ratio 1: 2: 4	1.04	100 Cft.	43837.20	45,590.69
	0.92	(h) Nominal mix Ratio 1: 3: 6	3.64	100 Cft.	38182.80	138,985.39
4	7/4	Pacca brick work in foundation and plinth i) Cement, sand mortar Ratio 1 : 3	7.83	100 Cft.	34,119.45	267,155.29
5	6/36	Providing and laying damp proof course of cement concrete 1:2:4 (cement, sand, shingle), including bitumen coating. (b) with 2 coats of bitumen: i) 1½" thick (40 mm)	1.80	100 Sft.	11,126.15	20,027.07
6	6/37	Providing and laying vertical damp proof course with cement sand plaster and bitumen coating:-(a) with one coat of bitumen and one coat of polythene sheet 500 gauge:  ii) Ratio 1:3 b) ¾" thick (20 mm)	1.45	100 Sft.	7,997.25	11,596.01
7	7/5	Pacca brick work in ground floor:- i) cement, sand mortar Ratio 1:3	8.72	100 Cft.	36,912.60	321,877.87
8	6/6	Providing and laying reinforced cement concrete (including prestressed concrete), using Ordinary Portland Cement / Sulphate resisting cement / Slag cement as may be required; coarse sand and screened graded and washed aggregate, in required shape and design, including forms, moulds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.):-(  (a) (i) Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- (2) Type B (nominal mix 1: 1½: 3)	430.63	Per Cft	733.45	315,845.57
	0.84 0.84	(a)(iii) Reinforced cement concrete in slab of rafts / strip foundation, base slab of column and retaining walls; etc and other structural members other than those mentioned in 5(a) (i) above not requiring form work (i.e. horizontal shuttering) complete in all respects:- (2) Type B (nominal mix 1: 1½: 3)	288.18	Per Cft	597.40	172,158.73

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

**Sub Head # E: Staff Building**

SR. NO.	MRS 2nd Bi-Annual 2023 (Chap/Item)	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
9	6/12	Fabrication of mild steel reinforcement for cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars):- (c) Deformed bars (Grade-60)	15.02	100 kg	35,068.45	526,728.12
10	Chap-1,I-1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor. Lead From nearest quarry (130km)	10.30	100 Cft	6,704.50	69,056.35
11	11/9	Cement plaster 1:4 upto 20' (6.00 m) height:- a) 3/8" (10 mm) thick	27.35	100 Sft.	3,717.25	101,666.79
12	11/10	Cement plaster 3/8" (10 mm) thick under soffit of R.C.C. roof slabs only, upto 20' height. c) 1:4	7.63	100 Sft.	4,401.25	33,581.54
13	3/15	Filling, watering and ramming earth under floors:- (i) with surplus earth from foundation, etc. (ii) with new earth excavated from out side, lead upto one chain (30m)	0.94 1.73	1000 Cft. 1000 Cft.	6526.10 14,037.85	6,134.53 24,285.48
14	3/16	Extra for every 50 ft. (15 m) additional leador part thereof  i) for earth work soft, ordinary, hard and very heard (up to 1000 ft)	34.60	1000 Cft.	2,036.00	70,445.60
15	7/30	Supplying and filling sand under floor; or plugging in wells. (Provisional as Slect Fill)	13.36	100 Cft.	3,061.20	40,897.63
16	6/2	Dry rammed brick or stone ballast, 1½" to 2" (40 mm to 50 mm) gauge.	2.23	100 Cft.	11008.80	24,549.62
17	Oct-43	Providing and laying superb quality Porcelain glazed tiles flooring of MASTER brand of specified size in approved design, Color and Shade with adhesive/bond over 3/4" thick (1:3) cement plaster i/c the cost of sealer for finishing the joints i/c cutting grinding complete in all respect as approved and directed by the Engineer Incharge.				
		a) Full body Glazed tiles (ii) 600mmx 600 mm	625.44	100 Sft.	441.75	276,288.12
18	Oct-44	Providing and laying superb quality Porcelain glazed tiles of Master brand, skirting/dado of specified size, Color and Shade with adhesive / bond over 1/2" thick (1:2) cement plaster i/c the cost of and sealer for finishing the joints, cutting grinding complete in all respect as approved and directed by the Engineer Incharge.				
		a) Full body Glazed Tile (ii) 600mm x600 mm	219.86	100 Sft.	441.75	97,123.16

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

**Sub Head # E: Staff Building**

SR. NO.	MRS 2nd Bi-Annual 2023 (Chap/Item)	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
19	9/5	Single layer of tiles 225 x 113 x 40 mm laid over 100mm earth and 25mm mud plaster without bhoosa grouted with cement sand 1:3 on top of RCC roof slab provided with 1.72kg/sq.m bitumen coating sand blinded.	7.28	100 Sft.	12818.25	93,316.86
20	26/37	Supplying and laying polythene sheet over D.P.C under floors and on roofs, etc. (i) 300 gauge (0.003" thick)	728.00	Per Sft.	7.80	5,678.40
21	9/15	Khuras on roof 2'x2'x6" (600 x 600 x 150mm)	1.00	Each	1036.65	1,036.65
22	9/16	Bottom Khuras of brick masonry in cement mortar 1:6, 4'x2'x4½" (1200x600x113 mm) over 3" (75 mm) cement concrete 1:4:8.	1.00	Each	2,065.65	2,065.65
23	12/16	Providing and fixing M.S. sheet hollow pressed frame of doors, windows, C.windows, etc. (chowkat only) of 20 SWG welded with M.S. flat 6"x 1¼" x 1/8" (150mmx30mmx3mm) M.S. holdfast 9"x1"x1/8" (225mmx25mmx3mm) welded / screwed 4" (100 mm) long iron hinges, including filling chowkat with cement sand mortar 1:8 and embedding holdfast in cement concrete 1:2:4, complete in all respects: a) single rebate b) double rebate	91.00 21.00	Per Sft. Per Sft.	447.50 511.60	40,722.50 10,743.60
24	12/50(i)-	Providing and fixing 1½" (40 mm) thick hollow flush doors and windows with commercial ply (3 ply) on both faces of deodar wood shutter frame 1¼" (30 mm) thick and partial wood braces at about 3" (75mm) apart and deodar wood lipping 1½"x3/8" (40 mmx10 mm) fixed with M.S. chowkat (frame) including chromium plated fittings, etc. complete in all respects (without sliding bolt or lock):-	112.00	Per Sft.	2,015.90	225,780.80
25	C-10/7	Dry brick on edge paving, sand grouted, including preparation of bed by watering, ramming & bringing the same to proper camber, by ½" (13 mm) thick mud plaster.	2.19	100 Sft.	10,794.00	23,638.86
26	C-10/8	Grouting 4½" (113 mm) dry brick work with cement mortar ratio 1: 5	2.19	100 Sft.	3,183.25	6,971.32
27	12/61	Providing and fixing sliding bolt to doors:- iii) brass sliding bolt, 10" (250 mm) long	5.00	Each	986.80	4,934.00
28	13/5(C i+ii)	Painting new surface:- c) Preparing surface and painting of doors and windows any type (including edges):- i) priming coat. ii) each subsequent coat of paint. (2 coats)	2.24	100 Sft.	3,322.50	7,442.40
29	25/52	Providing and fitting all types of glazed aluminium windows of anodised bronze colour partly fixed and partly sliding using deluxe sections of approved manufacturer having frame size of 100x30 mm (4"x¾") and leaf frame sections of 50x20 mm (2"x¾"), all of 1.6mm thickness including 5mm thick imported tinted glass with rubber gasket using approved standard latches, hardware etc., as approved by the Engineer in-charge.	96.00	Per Sft.	1,488.65	142,910.40
30	25/58	Providing and fixing M.S. flat ½"x1/8" (13mm x 3mm) grill including ¾" x 1/8" (20 mmx3 mm) M.S. flat frame, in windows of approved design, including painting three coats, complete in all respects.	96.00	Per Sft.	626.95	60,187.20

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

**Sub Head # E: Staff Building**

SR. NO.	MRS 2nd Bi-Annual 2023 (Chap/Item)	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
31	11/22	Priming coat of chalk under distemper.	22.65	100 Sft.	348.00	7,882.20
32	11/23	Distempering ( a ) new surface ii) two coats	22.65	100 Sft.	1309.90	29,669.24
33	11/18	Cement pointing struck joints, on walls, upto 20' (6.00 m) hieght:- (external wall) a) ratio 1:2	22.20	100 Sft.	4305.60	95,584.32
34	19/7	<b>PLUMBING WORKS</b> Providing and fitting glazed earthen warewash hand basin 56x40cm, including bracket set, waste pipe and waste coupling, etc. ii) coloured, with pedestal	1.00	Each	9573.90	9,573.90
35	19/8	Providing and fixing stainless steel sink with drain board, size 120x60 cm (48"x24") including bracket set, waste pipe and waste coupling.	1.00	Each	11750.65	11,750.65
36	19/29	Providing and fixing chromium plated shower rose:- ii) 2x15 cm (¾"x6")	1.00	Each	1,990.40	1,990.40
37	19/30.	Providing and fixing, chromium plated mixing valve, for wash hand basin, sink or shower.	3.00	Each	3,688.00	11,064.00
38	23/23	Providing, laying, cutting, jointing, testing and disinfecting G.I. pipe line in trenches, with socket joints, using G.I pipes of B.S.S. 1387-1967 complete in all respects with specials and valves:- ii) Medium Quality (Provisional) b) ¾" i/d (20 mm) 2.65mm thick c) 1" i/d (25 mm) 3.25mm thick	26.40 20.00	Per Rft. Per Rft.	298.50 449.75	7,880.40 8,995.00
39	19/4	Providing and fitting glazed earthen ware water closet, squatter type, combined with foot rest. ii) coloured	1.00	Each	3,609.85	3,609.85
40	19/13	Providing and fitting plastic made low down flushing cistern 1363 liters (3 gallons) capacity, including bracket set, copper connection etc., complete. ii) coloured	1.00	Each	4,550.55	4,550.55
41	19/20	Providing and fixing looking glass 55x40 cm size and 5mm thick, first quality	1.00	Each	1242.00	1,242.00
42	19/23	Providing and fitting i) Plastic Soap Dish ii) Plastic toilet paper holder iii) Plastic towel rail iv) Plastic shelf 60X13cm with bracket and railing	1.00 1.00 1.00 1.00	Each Each Each Each	1,380.00 1,035.00 1,610.00 1,035.00	1,380.00 1,035.00 1,610.00 1,035.00
43	19/27	Providing and fixing chromium plated bib cock i) 2 cm (¾")	4.00	Each	1,630.40	6,521.60
44	19/34	Providing and fixing floor trap of cast iron, including concrete chamber all round, and C.I grating: ii) 10x7.5 cm (4"x3")	2.00	Each	1128.45	2,256.90

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

**Sub Head # E: Staff Building**

SR. NO.	MRS 2nd Bi-Annual 2023 (Chap/Item)	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
45	19/36	Providing and fitting gully trap, including cement concrete, cost of PVC grating 15x15cm and masonry chamber 30x30cm.	2.00	Each	1,493.65	2,987.30
46	23/47	Providing, laying, testing and commissioning of POLYPROPYLENE RANDOM COPOLYMER (PPRC) water supply pipe (Dadex/ Popular/ Beta or equivalent) with specified pressure rating PN (PRESSURE NOMINAL) and conforming to DIN 8077-8078 code i/c cost of solvent, specials, making jharries complete in all respect as approved and directed by Engineer Incharge. (Internal/External Diameters mentioned). <b>c) PN-25 pipe</b>				
		(ii) (5/8") 25 mm	66	Per Rft	151.80	10,018.80
		(iii) (3/4") 32 mm	22	Per Rft	242.55	5,336.10
47	19/47	Providing, fixing, testing and commissioning of µ-PVC (Unplasticized Polyvinyl Chloride) Nikasi/ waste pipe make of Dadex/ Popular/ Beta or equivalent, plain/ socket ended conforming to code EN-1329 of specified SDR (Standard Dimension Ratio) including the cost of specials and Solvents complete in all respect as approved and directed by the Engineer Incharge. <b>Type (SDR 32.5/SN 8)</b>				
		(iv) 3"(85 mm )	40	Per Rft	182.75	7,310.00
		(v) 4"(110 mm)	15	Per Rft	306.10	4,591.50
48	19/49	Providing, fixing, testing and commissioning of µ-PVC (Unplasticized polyvinyl Chloride) Nikasi/ waste pipe Fittings make of Dadex/ Popular/ Beta or equivalent, conforming to code EN-1329 including the cost of Solvents complete in all respect as approved and directed by the Engineer Incharge. <b>a) P-Trap</b>				
		(i) 4" dia	1.00	Each	1,293.60	1,293.60
<b>Total Amount MRS Item (Civil Works) (A)</b>						<b>3,522,869.72</b>
<b>1.0</b>		<b>WIRING AND ACCESSORIES</b>				
1.1	10(a-ii)/24, 3(iii)/24, 14(i)/24, 32(ii)/24	Wiring of light or fan point from switch to the point with 7/0.74 mm mm (3/0.029") PVC insulated single core cables in PVC pipes concealed in walls, columns and slabs including accessories, PVC box, 10 Amp gang switch 1 or 2 way as required, one for each light or fan and installed as in specifications.	17.00		2,244.00	38,148.00
1.2	10(a-iii)/24, 3(iii)/24	Circuit wiring from MCBs board to gang switches board with 3x7/0.74 mm (7/0.029") PVC insulated single core cables in appropriate size PVC conduit.	5.00		7,013.00	35,065.00
1.3	10(a-ii)/24, 3(iii)/24	The same as item No. 1.1 but from one light point to another light point.	12.00		1,852.00	22,224.00
1.4	10(a-iv)/24, 14(ii)/24, 36(i)/24, 3(iii)/24	5 Amp 2/3 pin universal flush mounting switch socket unit away from switch board and wired with 3x7/0.91mm (7/0.036") single core cable from nearest circuit available in PVC concealed conduits or trunking including all conduit accessories as required complete in all respect.	2.00		8,850.00	17,700.00
1.5						
1.5	10(a-iii)/24, 3(iii)/24	The same as item No. 1.4 but wiring from one socket to another socket with 3x7/0.74 mm (7/0.029") single core cable	2.00		5,212.00	10,424.00



**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA  
CITY**

**Sub Head # E: Staff Building**

SR. NO.	MRS 2nd Bi-Annual 2023 (Chap/Item)	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1.6	10(a-v)/24, 3(iii)/24, 36(ii)/24, 14(ii)/24	The same as item No. 1.4 but wiring of 15/20A, 3-pin flush mounting switch socket unit wired with 3x7/1.12mm (7/0.044") single core cable wires starting from D.B.	3.00		10,965.00	32,895.00
<b>2.0</b>		<b>Power Cables</b>				
2.1	13(c-vi)/24	Supply and erection of copper conductor cables for service connection, in pre-laid pipe/G.I. wire/trenches, etc. (rate for cable only) PVC insulated, PVC sheathed 4 core, 600/1000 volt non armoured cable				
(a)		10 mm (7/0.052")	100.00		935.85	93,585.00
2.2	10(c-vi)/24	Supply and erection of single core PVC insulated copper conductor cables, in pre-laid PVC pipe/M.S. conduit/G.I. pipe/wooden strip batten/wooden casing and capping/G.I. wire/trenches (rate for cables only) 450/750 volts, PVC insulated:				
(a)	10(c-vi)/24	10 mm sq (7/0.052")	100.00	Rft.	179.85	17,985.00
<b>3.0</b>		<b>Conduits / Pipes</b>				
3.1(a)	11(b)/23	PVC pipe/conduit Class-B 100 mm dia with accessories suitable for laying multi-core cables from pole to pole in trenches/directly buried including excavation.	80	Rft.	278	22,240.00
<b>Total Amount MRS Item (Electrical Works) (B)</b>						<b>290,266.00</b>
<b>Total Amount (MRS Item) (A+B)</b>						<b>3,813,135.72</b>
<b>Total Amount (Non MRS Item)</b>						<b>230,875.00</b>

**4,044,010.72**  
Say Rs. **4.04**  
Million

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT (WWTP) GOJRA CITY**

**Sub Head # E: Staff Building (Non MRS)**

SR. NO.	NON MRS	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
					(Rs)	(Rs)
	RA-09	Supply, transportation at site, storage, installation, testing and commissioning of the following items of work (unless specifically stated otherwise) including all material, labour, tools and accessories etc. required for proper completion of each item as per specification and drawings and/or as directed by the Engineer.				
<b>1.0</b>		<b><u>LIGHT FITTINGS AND FANS</u></b>				
1.1		Following LED Luminaries of suitable wattage make Philips, GE, Pierlite or approved equivalent suitable for the project requirements. Contractor to submit lighting design calculation to determine the adequacy of the wattage and should adjust the number of LEDs/wattage as per project lighting requirements. The fitting shall be approved by the Engineer.				
(a)		Light Fixture Type LED Batten surface mounted, 18W complete in all respect with allied accessories make Philips, GE, Pierlite or approved equivalent. The fitting shall be approved by the Engineer.	7.00	Each	3,328.00	23,296
(b)		Light Fixture Type LED Batten surface mounted, 10W above mirror in toilets complete in all respect with allied accessories make Philips, GE, Pierlite or approved equivalent. The fitting shall be approved by the Engineer.	1.00	Each	2,341.00	2,341
1.2		Wall bracket Light Fixture Type LED 6W energy saving lamp with holder and complete in all respect with allied accessories make Philips, GE, Pierlite or approved equivalent. The fitting shall be approved by the Engineer.	4.00	Each	3,465.00	13,860
1.3		20W LED Water tight light fixture IP 65 complete in all respect with all allied accessories or approved equivalent. The fitting shall be approved by the Engineer.	5.00	Each	19,611.00	98,055
1.4		Light Fixture Type LED surface mounted down lighter, 6W complete in all respect with allied accessories make Philips, GE, Pierlite or approved equivalent. The fitting shall be approved by the Engineer.	2.00	Each	2,769.00	5,538
1.5		56" ceiling fan sweep (Climax, Pak, Millat) make or approved equivalent.	2.00	Each	9,420.00	18,840
1.6		Wall Bracket fan 20" sweep make (Royal, Pak, GFC or approved equivalent) capacitor type, copper winding complete with all required accessories etc.	1.00	Each	12,401.00	12,401
<b>2.0</b>		<b><u>DISTRIBUTION BOARDS</u></b> D.Bs with TP incoming adjustable moulded case circuit breaker and SP miniature outgoing circuit breakers, Panel box SWG 16 powder coated RAL colour 7032, IP class 44 and with all accessories. alongwith all installation and operational accessories as per specification or as shown on the drawings.				
<b>2.1</b>		<b><u>D B- Staff Building MATERIAL</u></b> 03 Nos.outgoing 20A, MCB, SP, RC=10kA, Icu=100%Ics 02 Nos. Space for 10/20A, MCB Indication lights, push buttons, digital ammeter with selector switch, digital voltmeter with selector switch, Panel box SWG 16 powder coated RAL colour 7032, IP class 44 and with all accessories.				
<b>3.0</b>		<b><u>EARTHING AND BONDING</u></b> Earth point comprising of 10 ft. 5/8" dia. (16 mm dia) copper coated M.S. rods driven in ground. The earthing rods shall be completed with fixing clamps etc.	2.00	No.	28,272.00	56,544
3.1						
<b>Total Amount NON MRS Items (Electrical Works)</b>						<b>230,875</b>

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**Sub Head # F:Area Lighting works of WWTP**

S #	NON MRS	DESCRIPTION	QUANTITY	UNIT	UNIT RATE	AMOUNT
					(Rs)	(Rs)
	RA	Supply, transportation at site, storage, installation, testing and commissioning of the following items of work (unless specifically stated otherwise) including all material, labour, tools and accessories etc. required for proper completion of each item as per specification and drawings and/or as directed by the Engineer.				
<b>1</b>		<b><u>Road / Street Lighting Poles and Foundations</u></b>				
(a)		10 m high single arm conical octagonal (hot dip) galvanized steel pole with extension arm luminaire arrangement, base plate, 2Amp., (RC=10KA) circuit breaker, terminal blocks including end caps, base connection plates & end stopper etc. as shown on drawing.	45.00	Each	150,866.95	6,789,013
(b)		Road Lighting Pole Foundation (Bitumen Coating)	45.00	Each	20,055.00	902,475
<b>2</b>		<b><u>LED Road Light Fixtures</u></b>				
a)		Road Lighting LED Luminaries 120 Watt make Philips, GE, or approved equivalent, fully in compliance with the specified requirements suitable for the project requirements, fully IP 66 with corrosion resistant die cast aluminum housing, silicon gas kit, thermally hardened glass complete with LED drivers, surge protection and all accessories/ components required for the proper operation of the system. The luminaries shall be fully flexible for future upgrades and easy replacements for maintenance purposes. Contractor to submit lighting design calculation to determine the adequacy of the wattage and should adjust the number of LEDs/wattage as per project lighting requirements.	45.00	No.	67,350.00	3,030,750
<b>3</b>		<b><u>Conduits / Pipes</u></b>				
		PVC pipe/conduit with accessories suitable for laying multi-core cables on road crossings.				
a)		100 mm Class-B (Pole to pole)	15,836.40	Rft.	414.00	6,556,270
b)		100 mm Class-D (Road crossing)	2,595.60	Rft.	684.00	1,775,390
<b>4</b>		<b><u>Power Cables</u></b>				
a)		4-core 25 mm <sup>2</sup> PVC insulated and PVC overall sheathed 600/1000 Volt grade unarmoured copper cable from main power supply to LCP. (Imported copper shall be used. Verified documentary evidence for source of copper & PVC shall be furnished prior to manufacturing)	20,151.60	Rft.	490.00	9,874,284
b)		4-core 50 mm <sup>2</sup> PVC insulated and PVC overall sheathed 600/1000 Volt grade unarmoured copper cable from main power supply to LCP. (Imported copper shall be used. Verified documentary evidence for source of copper & PVC shall be furnished prior to manufacturing)	4,503.60	Rft.	881.00	3,967,672
c)		Single core 16 mm <sup>2</sup> PVC insulated and PVC overall sheathed 450/750 Volt grade copper cable from pole to pole as CPC. (Imported copper shall be used. Verified				

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

**Sub Head # F:Area Lighting works of WWTP**

S #	NON MRS	DESCRIPTION	QUANTITY	UNIT	UNIT RATE	AMOUNT
					(Rs)	(Rs)
d)		documentary evidence for source of copper & PVC shall be furnished prior to manufacturing)	20,942.40	Rft.	89.00	1,863,874
e)		Single core 25 mm <sup>2</sup> PVC insulated and PVC overall sheathed 450/750 Volt grade copper cable from pole to pole as CPC. (Imported copper shall be used. Verified documentary evidence for source of copper & PVC shall be furnished prior to manufacturing)	4,503.60	Rft.	129.00	580,964
-		3 Nos. 1 core 2.5 mm <sup>2</sup> (Red+Black+Green) Cu. PVC 450/750 Volt grade copper cable including connections at ends. The cables shall be drawn from junction box to the light fitting through hollow of the pole (for street light pole). (Imported copper shall be used. Verified documentary evidence for source of copper & PVC shall be furnished prior to manufacturing)				
-		40 Rft. cable is required for each pole and the unit is taken as No. Price per No.	45.00	No.	3,018.00	135,810
5		<b><u>Lighting Control Panels</u></b>				
a)		Road lighting control panel (LCP) with angle iron frame claded 16 SGW, sheet steel enclosure having high quality powder coated paint. The LCP shall be complete with incoming and outgoing MCCBs, Cu busbars, magnetic contactors, photo-electric switches, meters, indication lights, 16 SWG sheet steel construction with IP 43 protection class, door, locking arrangement etc. and all other accessories as required for quality work.	4.00	Each	208,631.00	834,524
-		<b>LCP Description</b>				
-		1 No. incoming 63Amp.(adjust.) TP, MCCB, 25 kA, Icu=100%Ics				
-		4 Nos. outgoing 16 Amp. (Adj.) TP MCCBs, 18 kA, Icu=100%Ics				
-		2 No. spare 16 Amp. (Adj.) TP MCCBs, 18 kA, Icu=100%Ics				
-		4 Nos. 26 Amp. magnetic contactor, AC-3				
-		2 No. spare 26 Amp. magnetic contactor , AC-3				
-		3 Nos. photo-electric switches				
-		a) 1 No. ammeters 0-40 Amp., with selector switch (04 position) and CT of 50/5 Amp				
-		b) 09 Nos. indication lights				
-		c) 1 No. voltmeter with fuse and 7 position selector switch.				
-		d) 3 Ph, N & Earth copper busbars				
-		e) Internal wiring & line-up terminals etc.				
-		f) Brass cable glands/accessories				
-		g) 3 Nos. Auto-Manual-OFF (3 position switches for operation in auto (with photocell) and normal (manual mode- photocell override)				
-		h) Panel steel grid painted alongwith locking arrangement				
-		i) IP =44/54 panel shall be weather proof, dust proof with studded and shade arrangement on top.				

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT**  
**(WWTP) GOJRA CITY**

Sub Head # F:Area Lighting works of WWTP

S #	NON MRS	DESCRIPTION	QUANTITY	UNIT	UNIT RATE	AMOUNT
					(Rs)	(Rs)
6		<b><u>Earthing Rod</u></b>				
a)		Earth point comprising of 10 ft. 5/8" dia. (16 mm dia) copper coated M.S. rods driven in ground near each lighting control panel and civil works as per drawings The earthing rods shall be completed with fixing clamps etc.	6.00	No.	8,008.00	48,048
<b>Total Amount</b>						<b>36,359,073</b>

Say Rs. **36.36**  
**Million**

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT  
PLANT (WWTP) GOJRA CITY**

**Sub Head # G: Floating wetland in Facultative ponds**

<b>Sr. No</b>	<b>Decsription</b>	<b>Uni t</b>				<b>Quantity</b>	<b>Rate per Unit (PKR)</b>	<b>Total Amount (PKR)</b>
	Floating wetland		4	680	330	897600		
						89760	600.00	53,856,000
<b>Total</b>								<b>53,856,000</b>

**Say Rs.                      53.86  
Million**

**RATE ANALYSIS PROVIDING & FIXING OF REINFORCED PLASTIC COMPOSITE (RPC) MANHOLE COVERS 22"**  
**I/D WITH RPC FRAME**

- 4 RPC Manhole Cover Manufactured with 100% Recycled Plastic Composite Material, 650 mm (26"dia) with clear opening size 600 mm (22" dia) and RPC manhole frame having dia meter 790 mm (31.1") with average breaking load capacity of 10 Ton and weight including frame of 50 kg (Minimum).

100 No. @ Rs. 9660.00 Each Rs. 966,000 /-

Add 20 % Contract profit & OHC

Total:- Rs. 966,000 /-  
Rs. 193,200 /-

**Total:- Rs. 1,159,200 /-**  
**Say Rs. 11,592 /-**

Rate Per Number

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE  
WATER TREATMENT PLANT (WWTP) GOJRA CITY**

**Rate Analysis for Lead**

Ser	Description	Unit	Quantity	Rate	Amount (Rs.)
<b>A</b>	<b><u>Carraige</u></b>				
	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor.				
	Chapter No - 1 / Item no - 1				
	1st Km	100 Cft	1	334.80	334.80
	2nd Km	100 Cft	1	160.30	160.30
	3rd Km	100 Cft	1	126.40	126.40
	4th Km	100 Cft	1	90.55	90.55
	5th Km	100 Cft	1	84.65	84.65
	6th Km	100 Cft	1	83.30	83.30
	7th Km	100 Cft	1	77.85	77.85
	8th Km	100 Cft	1	77.05	77.05
	9th Km	100 Cft	1	72.55	72.55
	10th Km	100 Cft	1	68.20	68.20
	10th Km to 95th Km / 103 - 10 = 93 Km	100 Cft	93	59.45	5,528.85
<b>Total Cost of 100 Cft</b>					<b>6,704.50</b>



<b>Package 1: Sewerage System</b>			
<b>Item</b>	<b>Quantity</b>	<b>Tentative Cost/Item-PKR. /-</b>	<b>Total Cost</b>
<b>A-PPEs for Health and Safety of Labor/Workers</b>			
Face Masks (3 PLY) - box	8	300	2400
Safety Hard Helmets	8	3,000	24000
Safety Shoes	8	3,000	24000
Hand Gloves	8	1,000	8000
Ear Plugs	8	500	4000
Reflective Safety Vest	8	1,000	8000
Safety Goggles	8	500	4000
<b>B-Community Health and Safety</b>			0
First Aid Box Complete	1	5,000	5000
Safety Signs	2	15,000	30000
Safety Cones	8	1,000	8000
Safety Tapes	8	1,500	12000
Portable Delineator with chain	3	2,200	6600
Emergency Portable Lights	2	3,000	6000
Solid Waste Collection Drums with Cover	1	12,000	12000
Fire Fighting Equipment Purchase and refilling	1	5,000	5000
Hiring of Environmental Manager (for 03 months)	3	50,000	150000
Labor Campsite Management	1	100,000	100000
Water Sprinkling	1	50,000	50000
Ambient Air Quality-Before, during, and after construction	3	85,000	255000
Noise Quality-Before, during, and after construction	3	1000	3000
Water Quality-Before, during, and after construction	3	22,000	66000
<b>Total (PKR)-A+B</b>			<b>783,000</b>

<b>Package 2.Disposal Station &amp; Forcemain</b>			
<b>Item</b>	<b>Quantity</b>	<b>Tentative Cost/Item- PKR./-</b>	<b>Total Cost</b>
<b>A-PPEs for Health and Safety of Labor/Workers</b>			
Face Masks (3 PLY) - box	30	300	9000
Safety Hard Helmets	30	3,000	90000
Safety Shoes	30	3,000	90000
Hand Gloves	30	1,000	30000
Ear Plugs	30	500	15000
Reflective Safety Vest	30	1,000	30000
Safety Goggles	30	500	15000
<b>B-Community Health and Safety</b>			0
First Aid Box Complete	1	10,000	10000
Safety Signs	4	15,000	60000
Safety Cones	8	1,000	8000
Safety Tapes	8	1,500	12000
Portable Delineator with chain	4	2,000	8000
Emergency Portable Lights	5	3,000	15000
Solid Waste Collection Drums with Cover	2	12,000	24000
Fire Fighting Equipment Purchase and refilling	1	10,000	10000
Hiring of Environmental Manager (for 03 months)	3	50,000	150000
Labor Campsite Management	1	200,000	200000
Water Sprinkling	2	100,000	200000
<b>C- Environment Quality Testing during Construction Phase</b>			
Ambient Air Quality-Before, during, and after construction	6	85,000	510000
Noise Quality-Before, during, and after construction	6	1000	6000
Water Quality-Before, during, and after construction	6	22,000	132000
Total (PKR)-A+B			1,624,000

<b>Package 3: Providing &amp; fixing of Manhole Cover</b>			
<b>Item</b>	<b>Quantity</b>	<b>Tentative Cost/Item- PKR./-</b>	<b>Total Cost</b>
<b>A-PPEs for Health and Safety of Labor/Workers</b>			
Face Masks (3 PLY) - box	5	300	1500
Safety Hard Helmets	5	3,000	15000
Safety Shoes	5	3,000	15000
Hand Gloves	5	1,000	5000
Ear Plugs	5	500	2500
Reflective Safety Vest	5	1,000	5000
Safety Goggles	5	500	2500
<b>Total (PKR)</b>			<b>46,500</b>

<b>4. WWTP (Estimated Budget of ESMMP)</b>			
<b>Item</b>	<b>Quantity</b>	<b>Tentative Cost/Item- PKR./-</b>	<b>Total Cost</b>
<b>A-PPEs for Health and Safety of Labor/Workers</b>			
Face Masks (3 PLY) - box	50	300	15000
Safety Hard Helmets	30	3,000	90000
Safety Shoes	30	3,000	90000
Hand Gloves	30	1,000	30000
Ear Plugs	30	500	15000
Reflective Safety Vest	30	1,000	30000
Safety Goggles	30	500	15000
<b>B-Community Health and Safety</b>			<b>0</b>
First Aid Box Complete	4	10,000	40000
Infrared Thermometer (Benetech GM-2200 or equivalent)	1	40,000	40000
Safety Signs	20	15,000	300000
Safety Cones	19	1,000	19000
Safety Tapes	20	1,500	30000
Portable Delineator with chain	20	2,200	44000
Emergency Portable Lights	20	3,000	60000
Solid Waste Collection Drums with Cover	20	12,000	240000
Fire Fighting Equipment Purchase and refilling	3	10,000	30000
Hiring of Environmental Manager (for 02 years)	24	50,000	1200000
Pole Hanging Waste Bins	8	12,000	96000
Labor Campsite Management	1	770,000	770000
Water Sprinkling	1	300,000	300000
Social and Behavior Change Campaign and Labor Awareness/Training	1	250,000	250000
<b>C- Environment Quality Testing during Construction Phase</b>			<b>0</b>
Ambient Air Quality-Before, during, and after construction	12	85000	1020000
Noise Quality-Before, during, and after construction	12	1000	12000
Water Quality-Before, during, and after construction	12	22000	264000
D -Monitoring cost			<b>0</b>
Water Quality Analysis Lab Establishment at site to ensure treated water quality as per WHO/PEQs	Estimated Cost has been incorporated in the BOQ of Civil works of WWTP in rise of 2,000,000		<b>0</b>
<b>Total (PKR)-A+B+C</b>			<b>5,000,000</b>

<b>5: Supply of Liquid Waste Machinery (Estimated Budget of ESMMP)</b>			
<b>Item</b>	<b>Quantity</b>	<b>Tentative Cost/Item- PKR./-</b>	<b>Total Cost</b>
<b>A-PPEs for Health and Safety of Labor/Workers</b>			
Face Masks (3 PLY) - box	5	300	1,500
Safety Hard Helmets	5	3,000	15,000
Safety Shoes	5	3,000	15,000
Hand Gloves	5	1,000	5,000
Ear Plugs	5	500	2,500
Reflective Safety Vest	5	1,000	5,000
Safety Goggles	5	500	2,500
<b>Total (PKR)</b>			<b>46,500</b>

<b>Total Estimated Cost for Implementation of ESMMP</b>		
<b>Package</b>	<b>Subproject Component</b>	<b>Estimated Cost</b>
1.	Sewerage System	783,000
2.	Disposal Station & Force main	1,624,000
3.	Providing & fixing of RPC Manhole Cover	46,500
4.	Construction of Waste Water Treatment Plant	5,000,000
5.	Supply of Liquid waste machinery	46,500
	<b>Total Estimated Cost for Implementation of ESMMP</b>	<b>7,500,000</b>

# QUOTATIONS



Manufacturers of Solid & Liquid  
Waste Management Machinery &  
Ground Support Equipment

**BEC/MC-KW/476/23**

**June 5, 2023**

**Mr. Abdul Ghaffar Naveed**  
**MMP Pakistan (Pvt) Ltd**

**(Municipal Committee,**  
**Khanewal, Distt: Multan)**

**Sub:- Quotation for De-silting Machine Mounted on Suzuki Ravi**

**Dear Sir,**

With reference to your requirement of subject De-silting Machine Mounted on Suzuki Ravi, please find below our best offers along with specifications as:-

**Specifications of Manhole De-silting Machine**

Sr #	Descriptions
1.	<b><u>Superstructure</u></b> <ul style="list-style-type: none"> <li>The Capacity / Container of the De-silting shall be not less than 0.5 cubic meters.</li> <li>The grab bucket shall be able to lift 40-50kg silt at one time.</li> <li>The bucket shall be able to reach to the depth of 40-50ft.</li> </ul>
2.	<b><u>Paint</u></b> All steel part surfaces free from Rust and Oil Residue. Two coats Zinc Based Epoxy Primer and two coat of final paint done with 2 components Poly-Urethane based Paints.

**Technical Specifications of Chassis Suzuki Ravi for De-silting Machine**

S #	Dimensions	Descriptions
1.	<b>Engine Capacity</b>	<b>37-40 HP</b>
2.	<b>Piston Displacement</b>	700-800 cc
4.	<b>Wheel Base</b>	1800-1900 mm
5.	<b>No of Cylinder</b>	3-4
6.	<b>Max Torque</b>	60-65 Nm

**BILAL ENGINEERING CO.**

G. T. Road (Opp. Rescue 1122 Office) Pindi Bypass, Gujranwala, Pakistan.

+92-55-3416075-76, +92-55-3416012-13

+92-55-3416077

info@beco.com.pk becopak@gmail.com







Manufacturers of Solid & Liquid  
Waste Management Machinery &  
Ground Support Equipment

7.	<b>Fuel Tank Capacity</b>	35-40 Liters
8.	<b>Steering</b>	RHD
9.	<b>Gear</b>	4 forward 1 reverse
10.	<b>Electric System</b>	12 Volt
11.	<b>Origin</b>	Japan, USA, Europe assembled in Pakistan

**Price:-**

Sr #	Descriptions	Amount
1	<b>De-silting Machine Mounted on Suzuki Ravi Pickup</b>	<b>Rs=4,525,000/= Per Unit</b>
	<b>Total Amount</b>	<b>Rs=4,525,000/= Including Taxes</b>

**Commercial Terms & Conditions**

- 100% Payment of Suzuki Ravi Pickup is to be made in advance in favor of Suzuki Ravi Motors
- Price of pickup chassis is valid for 15 days
- 50% Advance payment and balance against delivery
- Delivery period will be 120-160 days after receipt of purchase order, advance payment & truck chassis
- Pre-delivery inspection of the machine will be made at manufacturer's site before final coating of paint/Delivery
- Warranty period will be ONE YEAR against manufacturing fault or bad workmanship.
- The quoted price of superstructure is valid till 30 June 2023
- The quoted prices are inclusive of taxes and are based on current duties/taxes by Government. Any change in tax structure shall be on client's part.

On your disposal for any further information you may need we remain,

**Very Truly Yours,**



**For Bilal Engineering Company**

**BILAL ENGINEERING CO.**


G. T. Road (Opp. Rescue 1122 Office) Pindi Bypass, Gujranwala, Pakistan.

+92-55-3416075-76, +92-55-3416012-13

+92-55-3416077

info@beco.com.pk becopak@gmail.com



 <b style="font-size: 1.5em;">THE ZAINAB ENGINEERING</b>	LV SWITCHGEAR, SYNCHRONIZING PANEL, CENTRAL CONTROL STATION, MOTOR CONTROL CENTER, PFI PLANT, DISTRIBUTION BOARDS, LT SERVICE BOX, ELECTRIC METER BOX, CABLE TRAYS & CABLE LADDER, BUS TIE DUCT (BTD), ALL ELECTRICAL ACCESSORIES, MAINTENANCE SERVICES AND CONSULTENCY.	2-KM JHANG ROAD, NEAR GULFISHAN MORR, FAISALABAD. Email: zec2001@hotmail.com TEL # 041-2658851, 2651336 FAX # 041-2659981, 2651337
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M/S WASA Faisalabad


Atten. Mr. Gulam Shabier (0340-9995007)

**Quotation****Ref. # ZEC-W-3151****Date: 07-05-2023****Subject: Price Quotation for Supply of Transformer Incoming Box****DETAIL OF ACCESSORIES**

SR #	DESCRIPTION	Unit	Qty.	U-Price	T-Price
<b>A</b>	<b>Incoming Section</b>				
1	MCCB, 3-Pole, 1250A, Icu/Ics 100/50KA, Hyundai/Eqv.	Nos.	1	321,300	321,300
2	Phase Indication Lights 25mm (Red, Yellow, Blue) Telemecanique/E	Nos.	3	100	300
<b>B</b>	<b>Housing Of Panel Box Waterproof</b>				
1	Panel Size in Millimeters: (600 W x 950 H x 500 D)	No.	1	42,000	42,000
	Using of GI Sheet 14/16 Gauge				
	With Powder Coating Paint RAL-7032				
	With Also Included Protection Sheet				
	Internal Plates Are Blue Powder Coating Paint				
	With Clear In All Aspects				
<b>C</b>	<b>Copper Busbar 99.9% Purity</b>				
1	Using of copper bus bar R,Y,B, Earth & Neutral	No.	1	68,200	68,200
	With Clear In All Aspects				
<b>D</b>	<b>Making of Copper Busbar</b>				
1	Using of PLC Operated Machines & Mechanical Tools	No.	1	7,700	7,700
	Copper Making Bending & Holing with clear in all aspect				

**Net Amount without GST (PKR) = 439,500**

We will be happy to provide any further information you may need and rest assured any of your order placed, which will receive our best attention.

 <b style="font-size: 1.5em;">THE ZAINAB ENGINEERING</b>	LV SWITCHGEAR, SYNCHRONIZING PANEL, CENTRAL CONTROL STATION, MOTOR CONTROL CENTER, PFI PLANT, DISTRIBUTION BOARDS, LT SERVICE BOX, ELECTRIC METER BOX, CABLE TRAYS & CABLE LADDER, BUS TIE DUCT (BTD), ALL ELECTRICAL ACCESSORIES, MAINTENANCE SERVICES AND CONSULTENCY.	2-KM JHANG ROAD, NEAR GULFISHAN MORR, FAISALABAD. Email: zec2001@hotmail.com TEL # 041-2658851, 2651336 FAX # 041-2659981, 2651337
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M/S WASA Faisalabad

Atten. Mr. Gulam Shabier (0340-9995007)

**Quotation****Ref. # ZEC-W-3151****Date: 07-05-2023****Subject: Price Quotation for Supply of LT Changeover Panel with PFI****DETAIL OF ACCESSORIES**

SR #	DESCRIPTION	Unit	Qty.	U-Price	T-Price
<b>A</b>	<b>Incoming Section</b>				
1	MCCB, 3-Pole, 1250A, Icu/Ics 100/50KA, Hyundai/Eqv.	Nos.	2	321,300	642,600
2	Mechanical Interlock System 2 in 1 Changeover	Nos.	1	7,500	7,500
3	Phase Indication Lights 25mm (Red, Yellow, Blue) Telemecanique/Eqv.	Nos.	6	150	900
4	Digital Power Meter 96x96 Tense/Eqv.	Nos.	1	15,000	15,000
5	Current Transformer 1200/5A, Tense/Eqv.	Nos.	3	6,500	19,500
6	MCB, 1-Pole, 6A, Hyundai/Eqv.	Nos.	3	1,750	5,250
7	SPD, 4-Pole, Europe	Nos.	1	25,000	25,000
8	MCB, 4-Pole, 63A, Hyundai/Eqv.	Nos.	1	10,500	10,500
<b>B</b>	<b>Outgoing Section</b>				
1	MCCB, 3-Pole, 300A, Icu/Ics 45/45KA, Hyundai/Eqv. (for ASD 120HP)	Nos.	3	53,325	159,975
2	MCCB, 3-Pole, 125A, Icu/Ics 26/26KA, Hyundai/Eqv. (For ASD 60HP)	Nos.	2	22,815	45,630
3	MCCB, 3-Pole, 250A, Icu/Ics 45/45KA, Hyundai/Eqv. (for ASD 100HP) <b>Only Space</b>	Nos.	1		-
<b>B</b>	<b>Auto PFI Section 350Kvar</b>				
1	Power Capacitor 50Kvar, 440VAC Electronicon Germany	Nos.	5	71,500	357,500
2	Power Capacitor 25Kvar, 440VAC Electronicon Germany	Nos.	3	35,750	107,250
3	Power Capacitor 12.5Kvar, 440VAC Electronicon Germany	Nos.	2	21,780	43,560
4	MCCB, 100A, 3-Pole, 16KA, Hyundai/Eqv.	Nos.	5	10,125	50,625
5	MCCB, 50A, 3-Pole, 16KA, Hyundai/Eqv.	Nos.	3	9,855	29,565
6	MCCB, 30A, 3-Pole, 16KA, Hyundai/Eqv.	Nos.	2	9,855	19,710
8	Magnetic Contactor 3-Pole, AC3~105A, Hyundai/Eqv.	Nos.	5	32,400	162,000
9	Magnetic Contactor 3-Pole, 50A, Hyundai/Eqv.	Nos.	3	15,525	46,575
10	Magnetic Contactor 3-Pole, 32A, Hyundai/Eqv.	Nos.	2	8,573	17,145
12	Power Factor Controller 12-Step, Entes/Tense/Eqv.	Nos.	1	61,525	61,525
13	On-Off Selector Switch Camsco/Eqv.	Nos.	1	3,000	3,000
14	Auto-Off-Manual Selector Switch Camsco/Eqv.	Nos.	12	3,000	36,000
15	ON Push Button Telemecanique/Eqv.	Nos.	12	450	5,400
16	On Indication Lights Green Telemecanique/Eqv.	Nos.	12	150	1,800
17	Current Transformer 1200/5A, Tense	Nos.	1	6,500	6,500
18	MCB, 6A, 1-Pole, Hyundai/Eqv.	Nos.	3	1,750	5,250

<b>C</b>	<b>Housing Of Panel Box</b>				
1	Panel Size in Millimeters: (2400 W x 2200 H x 700 D)	No.	1	352,000	352,000
	Using of GI Sheet 14 Guage				
	With Powder Coating Paint RAL-7032				
	With Also Included Protection Sheet				
	Internal Plates Are Blue Powder Coating Paint				
	With Clear In All Aspects				
<b>D</b>	<b>Copper Busbar 99.9% Purity</b>				
1	Using of copper bus bar R,Y,B, Earth & Neutral	No.	1	409,500	409,500
	With Clear In All Aspects				
<b>E</b>	<b>Power and Control Wiring</b>				
1	Using of copper cable power and control wiring	No.	1	75,000	75,000
	With Clear in all Aspects				
<b>F</b>	<b>Making of Copper Busbar</b>				
1	Using of PLC Operated Machnies & Mechanical Tools	No.	1	45,500	45,500
	Copper Making Bending & Holing with clear in all aspect				

<b>Net Amount without GST (PKR) =</b>	<b>2,767,260</b>
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We will be happy to provide any further information you may need and rest assured any of your order placed, which will receive our best attention.



# Triotex Construction Chemicals

## INNOVATIVE SOLUTIONS & SERVICES

Authorized Distributor

NTN: 9873742

### Quotation

#### CLIENT DETAIL

NAME: Abdul Gaffar

ADDRESS: FSD

PROJECT: MAG Associates

DATE: 13-Apr-23Subject: Supply/ApplyREF# 

SR#	Unit	DESCRIPTION	QTY	Area	Rate	REMARKS
1	sft	Supply of Epocoat 888	-	-	80 sft	
2	sft	Application of Epocoat 888	-	-	50 sft	
Total Amount					130	

1. Payment will be 100% advance
2. This quotation will be valid for 10 days
3. Supply of electricity is responsibility of client.

We Deal in all kind of Waterproofing (Chemicals & Bitumen Membrane) Epoxy Flooring, Non Shrink Grout, Steel Anchoring, Expansion joint Sealants, C Admixtures, SBR, Water Stopper, Swell Bar, Bitumen 10/20, 80/100 etc

Office # 2 Ground Floor, Civic Center Canal Road Faisalabad, Pakistan.

Phone # +92 (344) 4449102 Ph: 041-8787212

# ARYL TECHNOLOGIES (PVT.) LIMITED

Mr.Abdul Ghaffar Nadeem  
(CEO)  
MMP Pakistan  
Gulifshan Colony Jhang Road,  
Faisalabad.

QUOTATION NO. 2307101  
DATED: 10-07-2023

Project/Site:

Subject: **SUPPLY AND APPLY OF 1.5 MM TECNO HDPE GEOMEMBRANE**

Dear sir,

With reference to your inquiry regarding for supply and apply of "TECNO HDPE GEOMEMBRANE", we offer you the best proposal with minimum rates is as following.

Sr.No.	Detail/Description	UOM	Qty.	Item price	Amount
1-	SUPPLY AND APPLY OF TECNO HDPE GEOMEMBRANE (1.5 MM THICK)	SQM	96125	1,065	102,395,700

AMOUNT EXCL.SALEAS TAX 102,395,700  
PRA TAX AMOUNT @ 16% 16,383,312  
AMOUNT INCL.SALEAS TAX 118,779,012

## **TERMS & CONDITIONS:**

- 1- Above prices are Inclusive of all type of taxes (Sales tax,Income tax .)
- 2- Prices are Ex-Factory Lahore.
- 3- Above prices are subject to Advance payment.
- 4- Material will be despatched after received Purchase Order / Work Order along with advance.
- 5- Validity of this proposal for 45 days from 15-07-2023 to onwards.
- 6- These rates are valid only if markete have not to face any drastice change in Goernment of Pakistan Policy.

**NOTE:** Accomodtion for Application team including residence , meal and other credentials such electricity,clearance of site ,stairs,foldings etc.will be your responsibility.

**MUHAMMAD RAZAQ**

CEO

MOB. +92 300 470 5668

E-Mail: ahmarrazaq@gmail.com



To	PMDFC, Lahore
Your Ref	Offer for Vertical Non Clogging Centrifugal Sewage Disposal Pump Set for Dry Pit Installation for MC Jaranwala
Our Ref	LEA-16045 date: 08-06-2023
Quantity	01

**TECHNICAL DATA****PUMP**

Medium	Sewage Water
Pump Type	KVPk 300-500
Setting Depth	Up to 25 Feet
Flow Rate	8.00 Cusecs
Head	75 Feet
Speed	960 RPM
Efficiency	82%
Sp. Gravity	1.05 Assumed
Pump Input	83.12 HP
Drive Rating	100 HP
Flanges	BS 10 TABLE D
Suc x Del	12 in x 12 in
Temperature	Ambient

**MATERIAL SPECIFICATION**

Casing	Cast Iron GG-25
Impeller	Cast Iron GG-25
Wear ring	-
Suction end wear plate	Cast Iron GG-25
Impeller hub cap	Cast Iron GG-25
Pump Shaft	Carbon Steel C-60
Shaft Protecting sleeve	Cast Iron GG-25
Discharge cover	Cast Iron GG-25
Stuffing box housing	Cast Iron GG-25
Stuffing box gland	Cast Iron GG-25
Seal Ring	Cast Iron GG-25
Throat Bush	Cast Iron GG-25
Throat Bush	Cast Iron GG-25

**SCOPE OF SUPPLY & WORK**

- KSB Non-Clogging Vertical Sewage Pump Type KVPk 300-500 suitable for Dry Pit installation.
- Electric Motor 100 HP / 960 rpm, IP-55 Class Protection, Insulation Class F, 400±5 %Volts & 50 Hz. Siemens/KSB/ABB make.
- Cordon Shaft for coupling of pump and motor
- Suction Bend size 12 inches.
- Motor Stool suitable for Vertical Solid Shaft Siemens Motor 100 HP / 960 rpm.
- 2 Halves of suitable size coupling. One mounted on the motor Shaft and other on the pump shaft
- Motor Control Unit suitable for 100 HP Motor "KSB Design/Make" comprising of following item / protections: -
  - Main Circuit Breaker
  - Contactors
  - Overload relay
  - Over / Under voltage Protection relay
  - Phase failure and phase reversal protection
  - Voltmeter
  - Amp. meter
  - Indicating bulbs for on / overload / volt protection / all faults which are likely to be occurred in the Pump set.
  - Current Transformer
  - All contained in a steel lockable cabinet.

- Mechanical & electrical installation of pump set without any civil works.

Without any other accessories, piping works or any C.I Specials.

**PRICE:** Unit Budgetary price including 18% GST Ex-Site Rs. 19,000,000/-

**COMMERCIAL TERMS: -**

**PRICE:** Ex-Site

**PAYMENT:** 50% advance balance before delivery of material.

**DELIVERY:** 16-18 Weeks

**VALIDITY:** 30 days.


Note: Delivery Pipe, any MS/CI specials and civil work is not covered in this offer

Thanking you and assuring you of our best services and cooperation

Yours faithfully,  
For KSB Pumps Company Limited



Usman Javed  
Sales Executive



Najam us Saqib  
Sales Account Manager





To,

Mr. Ghaffar Naveed,

MMP Associates.

Dated: June 8, 2023

REF: CST-EEC-S-08062023

**SUB: Quotation for Supply of Perkins 200 KVA Diesel Generator set**

Dear Sir!

**Authorized Perkins OEM Partner**

Enpower Engineering Company is the authorized Perkins OEM Partner in the territory of Pakistan providing customers with turn-key solutions catered to their exact requirements. At Enpower Engineering Company, quality, performance & customer support are not compromised.

At Present our main areas of activities are:

- Generators Sales & Services
- AMC Periodic and Preventive Maintenance Services.
- Home Appliances

In case any further inquiry/information please feel free to contact us.  
Looking forward for your favorable response

Best Regards

**Subhan Ali Butt**  
(Sales Executive)  
Email: [sales07@enpowerservices.com](mailto:sales07@enpowerservices.com)  
Address: 55-N Gulberg II Lahore.



**Adeel Bashir**  
(General Manager Sales)  
Mob: +92 321 4400303  
Email: [adeel@enpowerservices.com](mailto:adeel@enpowerservices.com)  
Address: 55-N, Gulberg II Lahore.



## Quotation 1

### **Basic Technical Specifications Perkins 200 KVA Diesel Generator**

ENGINE			
Brand	PERKINS		
Engine Model	1106A-70TAG4		
Output-Prime	200-KVA		
Output-Standby	220-KVA		
Basic Features	6 cylinders vertical in-line, 4-Strok, water cooled, direct coupled, with standard accessories and base frame having built-in fuel tank, Complete exhaust system and with safety devices like speed control, oil pressure and many more safety devices.		
ALTERNATOR			
Alternator Make	Leroy Somer	Mecc-Alte	Stamford
Alternator Model	TBA Latest	TBA Latest	TBA Latest
Configuration	415/220 V, Three Phase, 4 wire, 50Hz, Power Factor 0.8 at 1500RPM		
CONTROL PANEL			
Auto Control Panel	Deep sea Module, Model DSE-6020 Ampere, Volt and frequency meter having features of Volt, Ampere indications for L1,L2 and L3, Temperature Gauge, Battery charging ampere, oil pressure, Separate Circuit Breaker for safety and many more safety features.		
<b>Note:</b> For more detail regarding Engine, Alternator, Control Panel, Please see the attached specification sheet.			

### **COMMERCIAL OFFER**

S.NO	DESCRIPTION/MODEL	QTY	U/P PKR	TOTAL PKR
1	Generator: Perkins 200 KVA Engine: 1106A-70TAG4 Alternator: Leroy Somer- France/Meccalte-UK / Stamford-UK Control Module: Deep Sea 4520- UK	1	7,500,000	7,500,000
2	Canopy: Sound Proof Canopy	1	Inclusive	Inclusive
3	Suitable battery & Mobil Oil for 200 KVA Generator	1	Inclusive	Inclusive
4	ATS for Single main incoming with Battery Charger, Main Load Breaker suitable for Perkins 200 KVADiesel Generator.	1	Exclusive	Exclusive
5	Transportation with/ Loading/Unloading of Generator on ground level with Crane	1	Exclusive	Exclusive
6	Foundation Pad for Diesel Generator 200 KVA atGround Level	1	Exclusive	Exclusive
7	Installation/Commissioning Services for 200 KVA Generator.	1	Exclusive	Exclusive
8	Misc Material for 200 KVA Diesel Generator	1	Exclusive	Exclusive
9	Earthing / Boring for diesel generator		Exclusive	Exclusive
10	Rubber pad for 200 KVA Diesel Generator	1	Exclusive	Exclusive
11	Power Cable 16 MM, 4 Core with laying	1FT	Exclusive	Exclusive
12	Control Cable 2.5 MM 4 Core	1FT	Exclusive	Exclusive
<b>TOTAL AMOUNT PKR</b>				<b>7,500,000</b>
<b>SPEICAL DISCOUNT</b>				<b>500,000</b>
<b>GRAND TOTAL AMOUNT PKR (Exclusive of GST 18%)</b>				<b>7,000,000</b>

## **ANNEXURE-C**

ECONOMIC ANALYSIS, SENSITIVITY ANALYSIS AND COST BENEFITED RATIO

**COST- BENEFIT ANALYSIS**

**Upgradation of Existing Sewerage System, Construction of Disposal Stations  
and Waste Water Treatment Plant  
in Gojra City**

**1. General**

Population of Gojra city in 2017 comprise 139,726 people. In 2022 2023, the population of the city of Gojra, Pakistan is estimated as 151 127 people. For meeting the needs of population up to year 2050, the proposed Project aims for improvement of Infrastructure of Municipal Services including Sewerage System to improve municipal service delivery. The proposed sewerage system includes:

1. Rehabilitation of the existing system,
2. Laying of 9.68 km sewer lines,
3. construction of 1 new disposal stations,
4. construction of wastewater treatment plant (WWTP)

**2. Project Analysis**

For undertaking cost-benefit analysis, the projected stream of project benefits / revenues over the project life of the project need to be compared to the estimated stream of project costs by bringing the two to a uniform basis through the process of discounting.

**2.1. Project Costs**

Investment costs for above mentioned works is estimated in both financial and economic terms are detailed as under:

**2.1.1. Project Investment Costs**

Project costs comprise of capital costs and annual operation and maintenance costs. Capital cost has been calculated, as Rs.1460.25 million and would be phased over two years as detailed below:

**Project Investment Costs**

Sr.No	Description	2023-24	2024-25	Total
		Million Rupees		
<b>A</b>	<b>Work Outlay Cost</b>	<b>909.13</b>	<b>394.66</b>	<b>1,303.79</b>
<b>B</b>	Add 2% contingencies	18.182	7.8932	26.076
	Add 5% PST (Less serial No 5,6)	45.457	19.733	65.190
	Add 5% escalation(Less Serial no 5,6)	45.457	19.733	65.190
	<b>Total (B)</b>	<b>109.095</b>	<b>47.359</b>	<b>156.456</b>
<b>Total Project Costs (A+B)</b>		<b>1,018.23</b>	<b>442.019</b>	<b>1,460.25</b>

Financial estimates are converted in to economic costs as Rs. million by applying SCF (Standard Conversion Factor) of 0.88.

Project Costs in Economic Terms

Description	2023-24	2024-25	Total
Financial Costs	1018.23	442.019	1460.249
Economic Costs	896.042	388.976	1,285.019

## 2.2. Financial Analysis

No sewerage tariff are currently being levied in Gojra city, thereby, no revenues, public or private, would be directly generated. Hence, financial analysis is not required as there is no positive cash flow or revenue stream that contributes to the calculation of an internal rate of return or cost-benefit ratio

The project is of the nature of basic public utility, it is therefore Government's responsibility to bear all cost and provide sewerage facility to people of the area. Thereby, for future also no sewerage fee is proposed to be charged.

## 2.3. Economic Aspects

The Program aims for improvement of Infrastructure of Municipal Services include Sewerage System to improve municipal service delivery by:

- rehabilitation of the existing system
- laying of 9.68 km sewer lines
- construction of 1 new disposal stations,
- construction of wastewater treatment plant (WWTP)

Quantifiable project economic benefits (though highly subjective) may include:

- i. Health costs savings by protecting drinking water sources from contamination by water-born waste and by laying new sewer lines, constructing new disposal station and new WWT plant.
- ii. Productivity improvement benefits
- iii. Reduction in infant mortality rate

Other benefits of socio-economic nature may include

- i. Increased employment during construction period
- ii. Providing the basic municipal service infrastructure to the city people
- iii. Improving / upgrading the service delivery level for the entire city population
- i. Improving economic growth of the city
- ii. Improving the environment of the city, making it livable
- iii. Improved overall socio-economic development

## **ANNEXURE-D**

### **WORK PLAN**

WORK PLAN

**UPGRADATION OF SEWERAGE SYSTEM AND CONSTRUCTION OF WASTE WATER TREATMENT PLANT  
(WWTP) GOJRA CITY**

S #	Description	2023			2024												2025	
		Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
1	Sewerage system																	
2	Disposal station & Forcemain																	
3	Providing and Fixing of RPC manhole Cover																	
4	Construction of Wastewater Treatment Plant (WWTP)																	
5	Supply of Liquid Waste Machinery																	
6	E & S																	



(1)

**Environmental & Social Screening Checklist****Package 1 Sewerage System****Laying of Trunk and sub main RCC sewers of 7.2 km and laying of branch sewer of 3.2 km****Instructions:**

Environmental and Social Focal Persons (ESFPs)<sup>1</sup> nominated by the MCs for PCP environmental and social management, will use this checklist in field for environmental and social screening and categorization of each and every sub-project proposed to be executed under the Program.

Deputy Program Officers-Environmental and Social Management deputed by PMDFC in regional offices will technically assist and support the ESFPs/MCs in filling in of this Checklist

It is to be attached with the main document<sup>2</sup> of sub-projects at planning stage and will be duly signed by the relevant ESFP and endorsed by the respective DPO-ESM

This checklist focuses on environmental issues and social concerns. To ensure that social dimensions are adequately considered, Involuntary Resettlement Screening Checklist will also be used

(iii) The purpose of this E&S Screening Checklists is to identify potential “Negative” impacts of environmental and social attributes or to enhance the existing environmental & social benefits. Use the “remarks” section to discuss any anticipated mitigation measures.

<b>Name of ESFP:</b>	<b>Muhammad Shah Rukh Tariq MOI (I&amp;S)</b>	
<b>Name of MC:</b>	<b>Gojra</b>	
<b>Sub-Project Sector:</b>	<b>Sewerage</b>	
<b>Sub-Project Title:</b>	Upgradation of Sewerage System and Construction of Waste Water Treatment Plant (WWTP)	
<b>Sub- Project Categorization:</b>	<b>E-1</b> ✓	<b>S-1</b>
	<b>E-2</b>	<b>S-2</b> ✓
	<b>E-3</b>	<b>S-3</b>
<b>Date of Screening:</b>	07-06-2023	
<b>Anticipated Project Activities</b>	Laying of Trunk and sub main RCC sewers of 7.2 km and laying of branch sewer of 3.2 km	
<b>Estimated Cost of Subprojects</b>	1460.25 million	
<b>Completion Time/Duration</b>	1 year	

<sup>1</sup> In all MCs, ESFPs are notified by Local government; MO (I&S) are focal persons for environmental sector and MO(P) are focal persons for social sectors.

<sup>2</sup> It is meant as PC-I and/or engineering estimates of sub-project

## CHECKLIST

Screening Questions	Yes	No	Remarks
<b>A. Project Siting</b>			
<b>Is the Sub-Project area adjacent to or within any of the following?</b>			
<b>Environmentally sensitive areas?</b>			
Legally protected Area		✓	No legally protected area lies within 200 meters jurisdiction of Sub-Project.
Any surface water body (river, canal, stream, lake, wetland) within 200 meters of the proposed sub project		✓	No water body observed within 200 meters in the Sub-Project area
Estuarine		✓	Not observed in sub project area
Special area for protecting biodiversity		✓	Not observed in sub project area
Buffer zone of protected area		✓	Not observed in sub project area
Mangroves Forest		✓	Not observed in sub project area
Man-made forest /game reserve, orchid /crops or any other area of environmental importance	✓		Mostly is urban area around these lines but at some places green fields are present on both sides
<b>Socially sensitive /important areas/communities/ people?</b>			
Physical Cultural Resources (PCRs) and or any site of cultural/religious importance (Graveyard, Shrine, Mosque, Church, Gordwarah, Temple, Fort, archeological/historical site) within 100 m of the proposed subproject			10 Mosque, one shrine observed within 100 meters of the Sub-Project interventions but have no direct/indirect significant environmental & social impacts. There would be hindrance in the mobility of people during Sewerage construction phase. However, this will be a temporary impact and would be managed by proper controlling the traffic and mitigation measures will be ensured in the ESMMP of ESIA report. No other significant adverse impacts on sensitive receptors are foreseen

Sensitive receptors (Schools, colleges, Shrine, Mosque, Church, hospitals and clinics) within 100 meters of the proposed sub project	✓		13 school, and 01 madrasa exist within 100 m of the subproject interventions There would be hindrance in the mobility of people during Sewerage construction phase. However, this will be a temporary impact and would be managed by proper controlling the traffic. No other significant adverse impacts on sensitive receptors are foreseen
Any graveyard of local community (Muslims or Christians)	✓		One Graveyard exist within 10 m of the subproject interventions along Gojra Road. but have no direct/indirect significant environmental & social impacts
Any demographic or socio-economic aspects of the subproject area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, squatters, ethnic minorities, people with disabilities, people in old age, socially isolated segments <sup>3</sup> of the society and women or children)?		✓	No negative impact observed on vulnerable groups (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, squatters, ethnic minorities, people with disabilities) Sub-Project area
Already existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	No infrastructure will be dismantling due to construction activities.
B. Potential Environmental Impacts			
Will the Sub-Project cause...			
1. Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	The proposed project site doesn't have any environmentally sensitive or protected areas.
2. Cutting of trees?		✓	No Cutting of trees involved during construction phase
3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	No significant adverse impacts on environment.
4. Generation of wastewater during construction or operation?		✓	Construction activities on minor level so waste water generation activities on lower level

<sup>3</sup> Due to caste, creed, religion or gender e.g. transgender

5. Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of wastewater?		✓	No such impact anticipated as no wastewater will be generated during construction activities.
6. Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers or due to increased soil erosion at construction site?		✓	No such impact foreseen, as work activities are limited level and away from the surface water bodies so no other significant adverse impacts on sensitive receptors are foreseen during construction Phase.
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction.		✓	No construction labor camps envisaged and a rental house is used as a labor camp. Due to limited scope of work under Sub-Project and un-skilled local labor will be engaged for the construction activities. Chemical storage activities monitor regularly.
8. Over pumping of ground water, leading to salinization and ground subsidence?		✓	No over pumping/pumping involved in scope of construction activities.
9. Serious contamination of soil due to construction works?		✓	Construction materials should be storage properly, no leakage or leaching Process involve so contamination of soil not observed
10. Aggravation of solid waste problems in the area?		✓	No aggravation of solid waste problems in the area is anticipated. The waste construction material will be collected and disposed at designated place on daily basis
11. Generation of hazardous waste?		✓	Bitumen containing solid waste will be generated during dismantling of existing road at some point during laying of sewerage line that will be disposed properly at designated place.
12. Increased air pollution due to sub-project construction and operation?		✓	The subproject interventions are on small scale that will not significantly increase air pollution
13. Noise and vibration due to sub-project construction or operation?	✓		Noise and vibration will be generated during excavation and pipe laying activities but the level is expected to be low. However, the noise will be monitored on regularly during construction by the contractor

14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?		✓	No Temporary breeding habitats creates during Construction activities for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid
15. Use of chemicals during construction?		✓	No chemicals will be used during construction activities
<b>C: Potential Social Impacts</b>			
Will the Sub-Project cause...			
1. Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?		✓	No impairment/damage to any PCR envisioned as per scope of construction activities
2. Displacement or involuntary resettlement of people?  (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	Not observed in sub project area
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups 4(mentioned above)?		✓	There will be no Impact on the poor women, children and or other vulnerable groups
4. Temporary impediments in movements of people/transport and animals?	✓		There would be hindrance in the mobility of people during construction phase. However, this will be a temporary impact and would be managed by proper controlling the traffic. The Contractor in this context will ensure housekeeping.
5. Large population influx during sub-project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	Due to Limited Scope of work activities, Local unskilled labor will be preferred by the Contractor
6. Social conflicts if workers from other areas are hired.	✓		Contractor will Hire local worker for unskilled construction activities
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	✓		Contractor will follow EHS SOPs to avoid physical hazards which are part of PC-I.

<sup>4</sup> Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

8. Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel, and other chemicals during construction and operation?	✓		There would be some safety issues during martial transportation, during construction phase. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors
9. Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation, and decommissioning.	✓		There would be safety issues in Construction phase, During storage of fuel and other chemicals and transport. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors
10. Any impact on sensitive receptors (mentioned above)		✓	Not observed in sub project area
11. Any impact of negative nature on already existing infrastructure including public amenities		✓	Not observed in sub project area

<b>Prepared By:</b> <b>Name:</b> Ihsan ul Haq Farooqi <b>Designation:</b> Senior Sociologist <b>Organization:</b> MM Pakistan <b>Signature:</b> <b>Date:</b> 07-06-2023	<b>Endorsed By:</b> <b>Name:</b> Muhammad Shah Rukh-MOI <b>Designation:</b> Municipal Officer Infrastructure (MOI) <b>Organization:</b> MC Kamalia <b>Signature</b> <b>Date:</b> 07-06-2023	<b>Reviewed By:</b> <b>Name:</b> Muhammad Asif Gillani <b>Designation:</b> Deputy Program Officer ESM <b>Organization:</b> PMDFC <b>Signature:</b> <b>Date:</b> 07-06-2023
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### INVOLUNTARY RESETTLEMENT SCREENING CHECKLIST

**Name of City/MC/LG: Gojra**

**Sub-Project Sector: Sewerage**

**Sub-Project Title: Laying of Trunk and sub main RCC sewers of 7.2 km and laying of branch sewer of 3.2 km**

**Sub- Project Categorization: E-1 & S-2**

**Date of Screening: 07-06-2023**

SECTION 1	Yes	No	Expected	Remarks
Does the project require land acquisition? Yes/No		✓		Already Road exists and pipe line laying along the road. land owned by Govt so no land acquired for this sub project
If yes, then describe the type of land being acquired from the categories below:		✓		No Land acquired for this sub project
Has any AED been conducted at the proposed location by the government? Yes/No		✓		Not observed in sub project area and confirm by MC Staff also
Land (Quantify and describe types of land being acquired in "remarks column".		✓		No Land acquired for this sub project
Government and LG owned land free of occupation (agriculture or settlement)		✓		Already land owned by govt so no land acquired for this sub project
Government or state-owned land (other than LG) free of occupation (agriculture or settlement)		✓		No Land acquired for this sub project. No government or state-owned land will be affected due to the implementation of the project
Private land		✓		Construction activities will be limited on streets, no additional private land will be required/ affect
Residential		✓		No residential structure or land will be affected due to the rehabilitation of sewerage lines
Commercial		✓		No Land acquired for this sub project
Agricultural		✓		No Land acquired for this sub project

Communal		✓		No Land acquired for this sub project
Others (specify in “remarks”).		✓		Already land owned by govt so no land acquired for this sub project
Name of owner/owners and type of ownership document if available.		✓		Already land owned by govt so no land acquired for this sub project
If land is being acquired, describe any structures constructed on it		✓		No Land acquired for this sub project
Land-based assets:		✓		No Land acquired for this sub project
Residential structures		✓		No Land acquired for this sub project
Commercial structures (specify in “remarks”)		✓		No Land acquired for this sub project
Community structures (specify in “remarks”)		✓		No Land acquired for this sub project
Agriculture structures (specify in “remarks”)		✓		
Public utilities (specify in “remarks”)	✓			Already land owned by govt so no land acquired for this sub project. Ramps are away from ROW.
Others (specify in “remarks”)		✓		No Land acquired for this sub project
If agricultural land is being acquired, specify the following:		✓		No Land acquired for this sub project
Agriculture related impacts		✓		No Land acquired for this sub project
Crops and vegetables (specify types and cropping area in “remarks”).		✓		No Land acquired for this sub project
Trees (specify number and types in “remarks”).		✓		No Land acquired for this sub project
Others (specify in “remarks”).		✓		No Land acquired for this sub project
Affected Persons (APs)		✓		No Persons Affected during this Project
Will any people be displaced from the land when acquired? Yes/No		✓		No Land acquired for this sub project
Number of APs		✓		No Persons Affected during this Project
Males		✓		No Persons Affected during this Project



Females		✓		No Persons Affected during this Project
Titled landowners		✓		No Land acquired for this sub project
Tenants and sharecroppers		✓		No Land acquired for this sub project
Leaseholders		✓		No Land acquired for this sub project
Agriculture wage laborers		✓		Not involved in this project
Encroachers and squatters (specify in remarks column)		✓		No Land acquired for this sub project
Vulnerable APs (e.g. women headed households, minors and aged, orphans, disabled persons, and those below the poverty line). Specify the number and vulnerability in “remarks”.		✓		No Land acquired for this sub project no one effected during this intervention
Others (specify in “remarks”)		✓		Not involved in this project











Pictoral view of Farooq Park, Gojra



Pictoral view of Altaf Park, Gojra

<b>Package 1: Sewerage System</b>			
<b>Item</b>	<b>Quantity</b>	<b>Tentative Cost/Item-PKR. /-</b>	<b>Total Cost</b>
<b>A-PPEs for Health and Safety of Labor/Workers</b>			
Face Masks (3 PLY) - box	8	300	2400
Safety Hard Helmets	8	3,000	24000
Safety Shoes	8	3,000	24000
Hand Gloves	8	1,000	8000
Ear Plugs	8	500	4000
Reflective Safety Vest	8	1,000	8000
Safety Goggles	8	500	4000
<b>B-Community Health and Safety</b>			0
First Aid Box Complete	1	5,000	5000
Safety Signs	2	15,000	30000
Safety Cones	8	1,000	8000
Safety Tapes	8	1,500	12000
Portable Delineator with chain	3	2,200	6600
Emergency Portable Lights	2	3,000	6000
Solid Waste Collection Drums with Cover	1	12,000	12000
Fire Fighting Equipment Purchase and refilling	1	5,000	5000
Hiring of Environmental Manager (for 03 months)	3	50,000	150000
Labor Campsite Management	1	100,000	100000
Water Sprinkling	1	50,000	50000
Ambient Air Quality-Before, during, and after construction	3	85,000	255000
Noise Quality-Before, during, and after construction	3	1000	3000
Water Quality-Before, during, and after construction	3	22,000	66000
<b>Total (PKR)-A+B</b>			<b>783,000</b>

(2)

**Environmental & Social Screening Checklist****Package 02 Disposal Station & Forcemain****Laying of Force main 4.5 km and Construction of Disposal Station. (20 kanal)****Instructions:**

Environmental and Social Focal Persons (ESFPs)<sup>5</sup> nominated by the MCs for PCP environmental and social management, will use this checklist in field for environmental and social screening and categorization of each and every sub-project proposed to be executed under the Program.

Deputy Program Officers-Environmental and Social Management deputed by PMDFC in regional offices will technically assist and support the ESFPs/MCs in filling in of this Checklist

It is to be attached with the main document<sup>6</sup> of sub-projects at planning stage and will be duly signed by the relevant ESFP and endorsed by the respective DPO-ESM

This checklist focuses on environmental issues and social concerns. To ensure that social dimensions are adequately considered, Involuntary Resettlement Screening Checklist will also be used

(iii) The purpose of this E&S Screening Checklists is to identify potential “Negative” impacts of environmental and social attributes or to enhance the existing environmental & social benefits. Use the “remarks” section to discuss any anticipated mitigation measures.

<b>Name of ESFP:</b>	<b>Muhammad Shah Rukh Tariq MOI (I&amp;S)</b>	
<b>Name of MC:</b>	<b>Gojra</b>	
<b>Sub-Project Sector:</b>	<b>Sewerage</b>	
<b>Sub-Project Title:</b>	Upgradation Of Sewerage System and Construction of Waste Water Treatment Plant (WWTP) Gojra City	
<b>Sub- Project Categorization:</b>	<b>E-1</b> ✓	<b>S-1</b>
	<b>E-2</b>	<b>S-2</b> ✓
	<b>E-3</b>	<b>S-3</b>
<b>Date of Screening:</b>	07-06-2023	
<b>Anticipated Project Activities</b>	Laying of Force main 4.5 km.	
	Construction of Disposal Station. (20 kanal)	
<b>Estimated Cost of Subprojects</b>	1460.25 million	
<b>Completion Time/Duration</b>	1 year	

<sup>5</sup> In all MCs, ESFPs are notified by Local government; MO (I&S) are focal persons for environmental sector and MO(P) are focal persons for social sectors.

<sup>6</sup> It is meant as PC-I and/or engineering estimates of sub-project

## CHECKLIST

Screening Questions	Yes	No	Remarks
<b>A. Project Siting</b>			
<b>Is the Sub-Project area adjacent to or within any of the following?</b>			
<b>Environmentally sensitive areas?</b>			
Legally protected Area		✓	No legally protected area lies within 200 meters jurisdiction of Sub-Project.
Any surface water body (river, canal, stream, lake, wetland) within 200 meters of the proposed sub project		✓	No water body observed within 200 meters in the Sub-Project area
Estuarine		✓	Not observed in sub project area
Special area for protecting biodiversity		✓	Not observed in sub project area
Buffer zone of protected area		✓	Not observed in sub project area
Mangroves Forest		✓	Not observed in sub project area
Man-made forest /game reserve, orchid /crops or any other area of environmental importance	✓		Mostly are agricultural area around these lines present on both sides
<b>Socially sensitive /important areas/communities/people?</b>			
Physical Cultural Resources (PCRs) and or any site of cultural/religious importance (Graveyard, Shrine, Mosque, Church, Gordwarah, Temple, Fort, archeological/historical site) within 100 m of the proposed subproject			10 Mosque, one shrine observed within 100 meters of the Sub-Project interventions but have no direct/indirect significant environmental & social impacts. There would be hindrance in the mobility of people during Sewerage construction phase. However, this will be a temporary impact and would be managed by proper controlling the traffic. No other significant adverse impacts on sensitive receptors are foreseen
Sensitive receptors (Schools, colleges, Shrine, Mosque, Church, hospitals and clinics) within 100 meters of the proposed sub project	✓		01 madrassa exist within 100 m of the subproject interventions There would be hindrance in the mobility of people during Sewerage construction phase. However, this will be a temporary impact



			and would be managed by proper controlling the traffic. No other significant adverse impacts on sensitive receptors are foreseen
Any graveyard of local community (Muslims or Christians)	✓		One Graveyard exist within 10 m of the subproject interventions along Gojra Road. but have no direct/indirect significant environmental & social impacts
Any demographic or socio-economic aspects of the subproject area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, squatters, ethnic minorities, people with disabilities, people in old age, socially isolated segments <sup>7</sup> of the society and women or children)?		✓	No negative impact observed on vulnerable groups (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, squatters, ethnic minorities, people with disabilities) Sub-Project area
Already existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	No infrastructure will be dismantling due to construction activities.
B. Potential Environmental Impacts			
Will the Sub-Project cause...			
1. Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	The proposed project site doesn't have any environmentally sensitive or protected areas.
2. Cutting of trees?		✓	No Cutting of trees involved during construction phase
3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	No significant adverse impacts on environment.
4. Generation of wastewater during construction or operation?		✓	Construction activities on minor level so waste water generation activities on lower level
5. Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of wastewater?		✓	No such impact anticipated as no wastewater will be generated during construction activities.
6. Alteration of surface water hydrology of waterways resulting in increased sediment in		✓	No such impact foreseen, as work activities are limited level and away from the surface water bodies so no other significant adverse impacts on sensitive

<sup>7</sup> Due to caste, creed, religion or gender e.g. transgender

streams/rivers or due to increased soil erosion at construction site?			receptors are foreseen during construction Phase.
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction.		✓	No construction labor camps envisaged and a rental house is used as a labor camp. Due to limited scope of work under Sub-Project and un-skilled local labor will be engaged for the construction activities. Chemical storage activities monitor regularly.
8. Over pumping of ground water, leading to salinization and ground subsidence?		✓	No over pumping/pumping involved in scope of construction activities.
9. Serious contamination of soil due to construction works?		✓	Construction materials should be storage properly, no leakage or leaching Process involve so contamination of soil not observed
10. Aggravation of solid waste problems in the area?		✓	No aggravation of solid waste problems in the area is anticipated. The waste construction material will be collected and disposed at designated place on daily basis
11. Generation of hazardous waste?		✓	Bitumen containing solid waste will be generated during dismantling of existing road at some point during laying of sewerage line that will be disposed properly at designated place.
12. Increased air pollution due to sub-project construction and operation?		✓	The subproject interventions are on small scale that will not significantly increase air pollution
13. Noise and vibration due to sub-project construction or operation?	✓		Noise and vibration will be generated during excavation and pipe laying activities but the level is expected to be low. However, the noise will be monitored on regularly during construction by the contractor
14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?		✓	No Temporary breeding habitats creates during Construction activities for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid
15. Use of chemicals during construction?		✓	No chemicals will be used during construction activities

<b>C: Potential Social Impacts</b>			
Will the Sub-Project cause...			
2. Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?		✓	No impairment/damage to any PCR envisioned as per scope of construction activities
2. Displacement or involuntary resettlement of people?  (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	Not observed in sub project area
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups (mentioned above)?		✓	There will be no impact on the poor women, children and or other vulnerable groups
4. Temporary impediments in movements of people/transport and animals?	✓		There would be hindrance in the mobility of people during construction phase. However, this will be a temporary impact and would be managed by proper controlling the traffic. The Contractor in this context will ensure housekeeping.
5. Large population influx during sub-project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	Due to Limited Scope of work activities, Local unskilled labor will be preferred by the Contractor
6. Social conflicts if workers from other areas are hired.	✓		Contractor will Hire local worker for unskilled construction activities
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	✓		Contractor will follow EHS SOPs to avoid physical hazards which are part of PC-I.
8. Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel, and other chemicals during construction and operation?	✓		There would be some safety issues during martial transportation, during construction phase. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors

<sup>8</sup> Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

9. Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation, and decommissioning.	✓		There would be safety issues in Construction phase, During storage of fuel and other chemicals and transport. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors
10. Any impact on sensitive receptors (mentioned above)		✓	Not observed in sub project area
11. Any impact of negative nature on already existing infrastructure including public amenities		✓	Not observed in sub project area

<b>Prepared By:</b> <b>Name:</b> Ihsan ul Haq Farooqi <b>Designation:</b> Senior Sociologist <b>Organization:</b> MM Pakistan <b>Signature:</b> <b>Date:</b> 07-06-2023	<b>Endorsed By:</b> <b>Name:</b> Muhammad Shah Rukh-MOI <b>Designation:</b> Municipal Officer Infrastructure (MOI) <b>Organization:</b> MC Kamalia <b>Signature</b> <b>Date:</b> 07-06-2023	<b>Reviewed By:</b> <b>Name:</b> Muhammad Asif Gillani <b>Designation:</b> Deputy Program Officer ESM <b>Organization:</b> PMDFC <b>Signature:</b> <b>Date:</b> 07-06-2023
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# **INVOLUNTARY RESETTLEMENT SCREENING CHECKLIST**

**Name of City/MC/LG: Gojra**

**Sub-Project Sector: Sewerage**

**Sub-Project Title: Laying of Force main from Ganda singh wala Disposal toward WWTP Site, Gojra**

**Sub- Project Categorization: E-1 & S-2**

**Date of Screening: 06-06-2023**

<b>SECTION 1</b>	<b>Yes</b>	<b>No</b>	<b>Expected</b>	<b>Remarks</b>
Does the project require land acquisition? Yes/No		✓		Already Road exists and pipe line laying along the road. land owned by Govt so no land acquired for this sub project
If yes, then describe the type of land being acquired from the categories below:		✓		No Land acquired for this sub project
Has any AED been conducted at the proposed location by the government? Yes/No		✓		Not observed in sub project area and confirmed by MC Staff also
Land (Quantify and describe types of land being acquired in "remarks column".		✓		No Land acquired for this sub project
Government and LG owned land free of occupation (agriculture or settlement)		✓		Already land owned by govt so no land acquired for this sub project
Government or state-owned land (other than LG) free of occupation (agriculture or settlement)		✓		No Land acquired for this sub project. No government or state-owned land will be affected due to the implementation of the project
Private land		✓		Construction activities will be limited on streets, no additional private land will be required/ affect
Residential		✓		No residential structure or land will be affected due to the rehabilitation of sewerage lines
Commercial		✓		No Land acquired for this sub project
Agricultural		✓		No Land acquired for this sub project
Communal		✓		No Land acquired for this sub project

Others (specify in "remarks").		✓		Already land owned by govt so no land acquired for this sub project
Name of owner/owners and type of ownership document if available.		✓		Already land owned by govt so no land acquired for this sub project
If land is being acquired, describe any structures constructed on it		✓		No Land acquired for this sub project
Land-based assets:		✓		No Land acquired for this sub project
Residential structures		✓		No Land acquired for this sub project
Commercial structures (specify in "remarks")		✓		No Land acquired for this sub project
Community structures (specify in "remarks")		✓		No Land acquired for this sub project
Agriculture structures (specify in "remarks")		✓		
Public utilities (specify in "remarks")	✓			Already land owned by govt so no land acquired for this sub project. Ramps are away from ROW.
Others (specify in "remarks")		✓		No Land acquired for this sub project
If agricultural land is being acquired, specify the following:		✓		No Land acquired for this sub project
Agriculture related impacts		✓		No Land acquired for this sub project
Crops and vegetables (specify types and cropping area in "remarks").		✓		No Land acquired for this sub project
Trees (specify number and types in "remarks").		✓		No Land acquired for this sub project
Others (specify in "remarks").		✓		No Land acquired for this sub project
Affected Persons (APs)		✓		No Persons Affected during this Project
Will any people be displaced from the land when acquired? Yes/No		✓		No Land acquired for this sub project
Number of APs		✓		No Persons Affected during this Project

Males		✓		No Persons Affected during this Project
Females		✓		No Persons Affected during this Project
Titled landowners		✓		No Land acquired for this sub project
Tenants and sharecroppers		✓		No Land acquired for this sub project
Leaseholders		✓		No Land acquired for this sub project
Agriculture wage laborers		✓		Not involved in this project
Encroachers and squatters (specify in remarks column)		✓		No Land acquired for this sub project
Vulnerable APs (e.g. women headed households, minors and aged, orphans, disabled persons, and those below the poverty line). Specify the number and vulnerability in "remarks".		✓		No Land acquired for this sub project no one effected during this this intervention
Others (specify in "remarks")		✓		Not involved in this project

Pictures	
	
	
	
Public Consultation and pictorial view of Force Main Route from Ganda singh wala disposal to WWTP, Gojra	



<b>Prepared By:</b> <b>Name:</b> Ihsan ul Haq Farooqi <b>Designation:</b> Senior Sociologist <b>Organization:</b> MM Pakistan <b>Signature:</b> <b>Date:</b> 07-06-2023	<b>Endorsed By:</b> <b>Name:</b> Muhammad Asad- <b>Designation:</b> Municipal Officer Planning (MOP) <b>Organization:</b> MC Kamalia <b>Signature</b> <b>Date:</b> 07-06-2023	<b>Reviewed By:</b> <b>Name:</b> Muhammad Asif Gillani <b>Designation:</b> Deputy Program Officer ESM <b>Organization:</b> PMDFC <b>Signature:</b> <b>Date:</b> 07-06-2023
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<b>Package 2.Disposal Station &amp; Forcemain</b>			
<b>Item</b>	<b>Quantity</b>	<b>Tentative Cost/Item- PKR./-</b>	<b>Total Cost</b>
<b>A-PPEs for Health and Safety of Labor/Workers</b>			
Face Masks (3 PLY) - box	30	300	9000
Safety Hard Helmets	30	3,000	90000
Safety Shoes	30	3,000	90000
Hand Gloves	30	1,000	30000
Ear Plugs	30	500	15000
Reflective Safety Vest	30	1,000	30000
Safety Goggles	30	500	15000
<b>B-Community Health and Safety</b>			0
First Aid Box Complete	1	10,000	10000
Safety Signs	4	15,000	60000
Safety Cones	8	1,000	8000
Safety Tapes	8	1,500	12000
Portable Delineator with chain	4	2,000	8000
Emergency Portable Lights	5	3,000	15000
Solid Waste Collection Drums with Cover	2	12,000	24000
Fire Fighting Equipment Purchase and refilling	1	10,000	10000
Hiring of Environmental Manager (for 03 months)	3	50,000	150000
Labor Campsite Management	1	200,000	200000
Water Sprinkling	2	100,000	200000
<b>C- Environment Quality Testing during Construction Phase</b>			
Ambient Air Quality-Before, during, and after construction	6	85,000	510000
Noise Quality-Before, during, and after construction	6	1000	6000
Water Quality-Before, during, and after construction	6	22,000	132000
Total (PKR)-A+B			1,624,000

(3)

**Environmental & Social Screening Checklist****Package 03 Providing & Fixing of RPCC Manhole cover (690 No.)****Instructions:**

Environmental and Social Focal Persons (ESFPs)<sup>9</sup> nominated by the MCs for PCP environmental and social management, will use this checklist in field for environmental and social screening and categorization of each and every sub-project proposed to be executed under the Program.

Deputy Program Officers-Environmental and Social Management deputed by PMDFC in regional offices will technically assist and support the ESFPs/MCs in filling in of this Checklist

It is to be attached with the main document<sup>10</sup> of sub-projects at planning stage and will be duly signed by the relevant ESFP and endorsed by the respective DPO-ESM

This checklist focuses on environmental issues and social concerns. To ensure that social dimensions are adequately considered, Involuntary Resettlement Screening Checklist will also be used

(iii) The purpose of this E&S Screening Checklists is to identify potential “Negative” impacts of environmental and social attributes or to enhance the existing environmental & social benefits. Use the “remarks” section to discuss any anticipated mitigation measures.

<b>Name of ESFP:</b>	<b>Muhammad Shah Rukh Tariq MOI (I&amp;S)</b>	
<b>Name of MC:</b>	<b>Gojra</b>	
<b>Sub-Project Sector:</b>	<b>Sewerage</b>	
<b>Sub-Project Title:</b>	Upgradation Of Sewerage System and Construction of Waste Water Treatment Plant (WWTP) Gojra City	
<b>Sub- Project Categorization:</b>	<b>E-1</b> ✓	<b>S-1</b>
	<b>E-2</b>	<b>S-2</b> ✓
	<b>E-3</b>	<b>S-3</b>
<b>Date of Screening:</b>	07-06-2023	
<b>Anticipated Project Activities</b>	Providing & Fixing of Manhole cover (690 No.)	
<b>Estimated Cost of Subprojects</b>	1460.25 million	
<b>Completion Time/Duration</b>	1 year	

<sup>9</sup> In all MCs, ESFPs are notified by Local government; MO (I&S) are focal persons for environmental sector and MO(P) are focal persons for social sectors.

<sup>10</sup> It is meant as PC-I and/or engineering estimates of sub-project

## CHECKLIST

Screening Questions	Yes	No	Remarks
<b>A. Project Siting</b>			
<b>Is the Sub-Project area adjacent to or within any of the following?</b>			
<b>Environmentally sensitive areas?</b>			
Legally protected Area		✓	No legally protected area lies within 200 meters jurisdiction of Sub-Project.
Any surface water body (river, canal, stream, lake, wetland) within 200 meters of the proposed sub project		✓	No water body observed within 200 meters in the Sub-Project area
Estuarine		✓	Not observed in sub project area
Special area for protecting biodiversity		✓	Not observed in sub project area
Buffer zone of protected area		✓	Not observed in sub project area
Mangroves Forest		✓	Not observed in sub project area
Man-made forest /game reserve, orchid /crops or any other area of environmental importance	✓		Not observed in sub project area
<b>Socially sensitive /important areas/communities/ people?</b>			
Physical Cultural Resources (PCRs) and or any site of cultural/religious importance (Graveyard, Shrine, Mosque, Church, Gordwarah, Temple, Fort, archeological/historical site) within 100 m of the proposed subproject			
Sensitive receptors (Schools, colleges, Shrine, Mosque, Church, hospitals and clinics) within 100 meters of the proposed sub project	✓		Not observed in sub project area
Any graveyard of local community (Muslims or Christians)	✓		Not observed in sub project area
Any demographic or socio-economic aspects of the subproject area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, squatters, ethnic minorities, people with disabilities, people in old age, socially isolated		✓	Not observed in sub project area

segments <sup>11</sup> of the society and women or children)?			
Already existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	No infrastructure will be dismantling due to construction activities.
B. Potential Environmental Impacts			
Will the Sub-Project cause...			
1. Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	The proposed project site doesn't have any environmentally sensitive or protected areas.
2. Cutting of trees?		✓	No Cutting of trees involved during construction phase
3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	No significant adverse impacts on environment.

4. Generation of wastewater during construction or operation?		✓	No such impacts are envisaged.
5. Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of wastewater?		✓	No such impacts are envisaged
6. Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers or due to increased soil erosion at construction site?		✓	No such impacts are envisaged
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction.		✓	No such impacts are envisaged
8. Over pumping of ground water, leading to salinization and ground subsidence?		✓	No such impacts are envisaged
9. Serious contamination of soil due to construction works?		✓	No such impacts are envisaged
10. Aggravation of solid waste problems in the area?		✓	No such impacts are envisaged
11. Generation of hazardous waste?		✓	No such impacts are envisaged

<sup>11</sup> Due to caste, creed, religion or gender e.g. transgender

12. Increased air pollution due to sub-project construction and operation?		✓	No such impacts are envisaged
13. Noise and vibration due to sub-project construction or operation?	✓		No such impacts are envisaged
14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?		✓	No such impacts are envisaged
15. Use of chemicals during construction?		✓	No chemicals will be used during construction activities
<b>C: Potential Social Impacts</b>			
Will the Sub-Project cause...			
3. Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?		✓	No impairment/damage to any PCR envisioned as per scope of construction activities
2. Displacement or involuntary resettlement of people?  (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	Not observed in sub project area
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups 12(mentioned above)?		✓	No such impacts are envisaged
4. Temporary impediments in movements of people/transport and animals?	✓		No such impacts are envisaged
5. Large population influx during sub-project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	No such impacts are envisaged
6. Social conflicts if workers from other areas are hired.	✓		No such impacts are envisaged
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	✓		Contractor will follow EHS SOPs to avoid physical hazards which are part of PC-I.

<sup>12</sup> Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

8. Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel, and other chemicals during construction and operation?	✓		There would be some safety issues during installation manhole cover. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors
9. Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation, and decommissioning.	✓		There would be safety issues in Construction phase, During storage of fuel and other chemicals and transport. The SOPs for health and safety have been included in the PC-I that have to be followed by the contractors
10. Any impact on sensitive receptors (mentioned above)		✓	Not observed in sub project area
11. Any impact of negative nature on already existing infrastructure including public amenities		✓	Not observed in sub project area

<b>Prepared By:</b> <b>Name:</b> Ihsan ul Haq Farooqi <b>Designation:</b> Senior Sociologist <b>Organization:</b> MM Pakistan <b>Signature:</b> <b>Date:</b> 07-06-2023	<b>Endorsed By:</b> <b>Name:</b> Shahrukh <b>Designation:</b> MOI&S <b>Organization:</b> MC Gojra <b>Signature:</b> <b>Date:</b> 07-06-2023	<b>Reviewed By:</b> <b>Name:</b> Asif Gillani <b>Designation:</b> Deputy Program Officer ESM <b>Organization:</b> PMDFC <b>Signature:</b> <b>Date:</b> 07-06-2023
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## INVOLUNTARY RESETTLEMENT SCREENING CHECKLIST

**Name of City/MC/LG: Gojra**

**Sub-Project Sector: Sewerage**

**Sub-Project Title: Providing & Fixing of Manhole cover**

**Sub- Project Categorization: E-1 & S-2**

**Date of Screening: 07-06-2023**

SECTION 1	Yes	No	Expected	Remarks
Does the project require land acquisition? Yes/No		✓		Already Road exists and pipe line laying along the road. land owned by Govt so no land acquired for this sub project
If yes, then describe the type of land being acquired from the categories below:		✓		No Land acquired for this sub project
Has any AED been conducted at the proposed location by the government? Yes/No		✓		Not observed in sub project area and confirm by MC Staff also
Land (Quantify and describe types of land being acquired in “remarks column”.		✓		No Land acquired for this sub project
Government and LG owned land free of occupation (agriculture or settlement)		✓		Already land owned by govt so no land acquired for this sub project
Government or state-owned land (other than LG) free of occupation (agriculture or settlement)		✓		No Land acquired for this sub project. No government or state-owned land will be affected due to the implementation of the project
Private land		✓		Construction activities will be limited on streets, no additional private land will be required/ affect
Residential		✓		No residential structure or land will be affected due to the rehabilitation of sewerage lines
Commercial		✓		No Land acquired for this sub project
Agricultural		✓		No Land acquired for this sub project
Communal		✓		No Land acquired for this sub project
Others (specify in “remarks”).		✓		Already land owned by govt so no land acquired for this sub project
Name of owner/owners and type of ownership document if available.		✓		Already land owned by govt so no land acquired for this sub project
If land is being acquired, describe any structures constructed on it		✓		No Land acquired for this sub project
Land-based assets:		✓		No Land acquired for this sub project
Residential structures		✓		No Land acquired for this sub project



Commercial structures (specify in “remarks”)		✓		No Land acquired for this sub project
Community structures (specify in “remarks”)		✓		No Land acquired for this sub project
Agriculture structures (specify in “remarks”)		✓		
Public utilities (specify in “remarks”)	✓			Already land owned by govt so no land acquired for this sub project. Ramps are away from ROW.
Others (specify in “remarks”)		✓		No Land acquired for this sub project
If agricultural land is being acquired, specify the following:		✓		No Land acquired for this sub project
Agriculture related impacts		✓		No Land acquired for this sub project
Crops and vegetables (specify types and cropping area in “remarks”).		✓		No Land acquired for this sub project
Trees (specify number and types in “remarks”).		✓		No Land acquired for this sub project
Others (specify in “remarks”).		✓		No Land acquired for this sub project
Affected Persons (APs)		✓		No Persons Affected during this Project
Will any people be displaced from the land when acquired? Yes/No		✓		No Land acquired for this sub project
Number of APs		✓		No Persons Affected during this Project
Males		✓		No Persons Affected during this Project
Females		✓		No Persons Affected during this Project
Titled landowners		✓		No Land acquired for this sub project
Tenants and sharecroppers		✓		No Land acquired for this sub project
Leaseholders		✓		No Land acquired for this sub project
Agriculture wage laborers		✓		Not involved in this project
Encroachers and squatters (specify in remarks column)		✓		No Land acquired for this sub project
Vulnerable APs (e.g. women headed households, minors and aged, orphans, disabled persons, and those below the poverty line). Specify the number and vulnerability in “remarks”.		✓		No Land acquired for this sub project no one effected during this this intervention
Others (specify in “remarks”)		✓		Not involved in this project

<b>Package 3: Providing &amp; fixing of Manhole Cover</b>			
<b>Item</b>	<b>Quantity</b>	<b>Tentative Cost/Item- PKR./-</b>	<b>Total Cost</b>
<b>A-PPEs for Health and Safety of Labor/Workers</b>			
Face Masks (3 PLY) - box	5	300	1500
Safety Hard Helmets	5	3,000	15000
Safety Shoes	5	3,000	15000
Hand Gloves	5	1,000	5000
Ear Plugs	5	500	2500
Reflective Safety Vest	5	1,000	5000
Safety Goggles	5	500	2500
<b>Total (PKR)</b>			<b>46,500</b>

(4)

**Environmental & Social Screening Checklist****Package 04 Construction wastewater treatment plant****Construction of WWTP (Sewage Waste Water Stabilization Ponds)****Instructions:**

Environmental and Social Focal Persons (ESFPs) nominated by the MCs for PCP environmental and social management, will use this checklist in field for environmental and social screening and categorization of each and every sub-project proposed to be executed under the Program.

Deputy Program Officers-Environmental and Social Management deputed by PMDFC in regional offices will technically assist and support the ESFPs/MCs in filling in of this Checklist

It is to be attached with the main document<sup>13</sup> of sub-projects at planning stage and will be duly signed by the relevant ESFP and endorsed by the respective DPO-ESM

This checklist focuses on environmental issues and social concerns. To ensure that social dimensions are adequately considered, Involuntary Resettlement Screening Checklist will also be used

(iii) The purpose of this E&S Screening Checklists is to identify potential "Negative" impacts of environmental and social attributes or to enhance the existing environmental & social benefits. Use the "remarks" section to discuss any anticipated mitigation measures.

<b>Name of ESFP:</b>	Muhammad Shah Rukh (MOI)						
<b>Name of MC:</b>	Gojra						
<b>Sub-Project Sector:</b>	Urban Development						
<b>Sub-Project Title:</b>	Waste Water Treatment Plant Gojra City. (55 Acre approx.)						
<b>Sub- Project Categorization:</b>	<table> <tr> <td><b>E-1</b> ✓</td><td><b>S-1</b></td></tr> <tr> <td><b>E-2</b></td><td><b>S-2</b> ✓</td></tr> <tr> <td><b>E-3</b></td><td><b>S-3</b></td></tr> </table>	<b>E-1</b> ✓	<b>S-1</b>	<b>E-2</b>	<b>S-2</b> ✓	<b>E-3</b>	<b>S-3</b>
<b>E-1</b> ✓	<b>S-1</b>						
<b>E-2</b>	<b>S-2</b> ✓						
<b>E-3</b>	<b>S-3</b>						
<b>Date of Screening:</b>	07-06-2023						
<b>Anticipated Project Activities</b>	Construction of WWTP (Sewage Waste Water Stabilization Ponds)						
<b>Estimated Cost of Subprojects</b>	1460.25 million						
<b>Completion Time/Duration</b>	1 year						
<b>Estimated Labor for Subproject</b>	20-30						

<sup>13</sup> It is meant as PC-I and/or engineering estimates of sub-project

## CHECKLIST

Screening Questions	Yes	No	Remarks
<b>A. Project Siting</b>			
Is the Sub-Project area adjacent to or within any of the following?			
<b>Environmentally sensitive areas?</b>			
Cultural heritage site		✓	No cultural heritage site observed within 250 meters of periphery of Sub-Project.
Legally protected Area (core zone or buffer zone)		✓	No legally protected area exists within 250 meters of radius of sub-Project.
Any surface water body (river, canal, stream, lake, wetland) within 250 meters of proposed project?			1 Irrigation Drain is located at the east bank of the selected place for Waste Water Treatment Plant within 10 feet approx.
Mangrove Forest		✓	No mangrove forest observed.
Estuarine		✓	No estuarine exists in Sub-Project proposed scope of work.
Special area for protecting biodiversity		✓	No protected area or buffer zone lies within peripheral zone of sub-Project.
Buffer zone of protected area		✓	
Man-made forest /game reserve, orchid/crops or any other area of environmental importance	✓		Farms/orchidaceous plants of chack saljah 379 are observed in surrounding areas of WWTP Land.
<b>Socially sensitive/Important areas/communities/people?</b>			
PCRs and or any site of cultural/religious importance (Graveyard, Shrine, Mosque, Church, Gordwarah, Temple, Fort, archeological/historical site) within 100 m of the proposed subproject	✓		Muslim Graveyard is located approximately 500 meters away for the selected place which will have no direct impact as per scope of work.
Sensitive receptors (Schools, colleges, hospitals and clinics) within 100 meters of the proposed sub project	✓		School and Union Council Office located approximately 500 meters away from the selected place.
Any graveyard of local community (Muslims or Christians)	✓		Muslim Graveyard is located approximately 500 meters away for the selected place.

Screening Questions	Yes	No	Remarks
Any demographic or socio-economic aspects of the sub-project area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, squatters, ethnic minorities, people with disabilities, people in old age, socially isolated segments of the society and women or children)?	✓		Socio-economic status of local community based of agriculture practices. They use to grow wheat, sugarcane, vegetables and fruit farms in surrounding area of Sub-Project. Sub-Project area is Barren Land and use as landfill site. Agricultural production improved of surrounding area and have socio-economic positive impact on These vulnerable groups.
Already existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means?	✓		Sub-Project area is Barren Land and use as landfill site. No public amenities situated within premises of proposed WWTP site which may be dismantled and will be compensated through ARAP, RAP.
<b>B. Potential Environmental Impacts</b> Will the Sub-Project cause...			
Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	The proposed project site doesn't have any environmentally sensitive or protected areas.
Cutting of trees?	✓		No cutting of trees are involved during this project.
Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	No disruption to any habitat/ecosystem due to any Sub-Project activities.
Generation of wastewater during construction or operation?	✓		Sewage wastewater of Gojra city will be treated through Waste Stabilization Ponds and Floating Wetlands during operational phase of Sub-Project and treated water will be discharged into nearby water body with the permission of custodian of the water body.
Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of waste water?	✓		Treated wastewater will be disposed off into nearby irrigation drain which will ultimately clean polluted water with Stabilization Ponds and Floating Wetlands treatment facility under Sub-Project.
Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers or due to increased soil erosion at construction site?	✓		There will be discharge of treated water into nearby irrigation drain and have no impact on surface water hydrology.

Screening Questions	Yes	No	Remarks
Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?	✓		Campsite establishment envisaged. Contactor will be instructed to rent a house with already established sewerage system OR submit plan for sewerage treatment for camp to Engineer In-charge.
Over pumping of ground water, leading to salinization and ground subsidence?		✓	No over pumping involved during construction works.
Serious contamination of soil due to construction works?	✓		Desiltation material will be generated during clearance of pond area and need urgent disposal at designated place.
Aggravation of solid waste problems in the area?	✓		Stockpiling of dismantled material may temporarily disturb local communities.
Generation of solid waste/hazardous waste?			
Increased air pollution due to sub-project construction and operation?	✓		Impact will be assessed before the execution of Sub-Project. Due to heavy traffic movement; there will be generation of PM <sub>2.5</sub> and ambient air will also be assessed during construction & post-construction.
Noise and vibration due to sub-project construction or operation?	✓		Due to flow of heavy-duty vehicles and private vehicles plus rikshaws; noise and vibration impact is substantial.
Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?	✓		During operation phase; such factors may cause significant impact which needs immediate remedial measures.
Use of chemicals during construction?		✓	Under sub-project scope, no hazardous chemical will be used during execution phase.
<b>C: Potential Social Impacts</b>			
Will the Sub-Project cause...			
1.Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?		✓	No any PCRs situated nearby the selected place of WWTP
2. Displacement or involuntary resettlement of people? (Physical displacement and/or economic displacement)		✓	Displacement or involuntary resettlement of people? (Physical displacement and/or economic displacement) not required during this project.

Screening Questions	Yes	No	Remarks
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups <sup>14</sup> (mentioned above)?		✓	No such disproportionate impacts on poor, women, children and or vulnerable groups but some daily wagers agriculture-based laborer's livelihood depends on said farms may be affected which will be compensated as per their entitlements.
4. Temporary impediments in movements of people/transport and animals?		✓	No significant movement of people/transport and animals observed because Sub-Project is proposed on agriculture fields in Peri-Urban area of Gojra City near project area.
5. Large population influx during sub-project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	No such impact envisaged.
6. Social conflicts if workers from other areas are hired?	✓		Local level labor engagement in the construction work may reduce and mitigated the issue
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	✓		To planning/ designing the Occupational Safety Health measures to mitigated the risks during the WWTP construction period
8. Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?	✓		To planning/ designing the Occupational Safety Health measures to mitigated the risks during the WWTP construction period
9. Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?	✓		
10. Any impact of negative nature on already existing infrastructure including public amenities		✓	Not observed in this project.

<sup>14</sup> Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

<b>Prepared By:</b> <b>Name:</b> Muhammad Imran <b>Designation:</b> Environment Specialist <b>Organization:</b> MM Pakistan <b>Signature:</b> <b>Date:</b> 07-06-2023	<b>Endorsed By:</b> <b>Name:</b> Shahrukh <b>Designation:</b> Municipal Officer Infrastructure (MO1) <b>Organization:</b> MC Gojra <b>Signature:</b> <b>Date:</b> 07-06-2023	<b>Reviewed By:</b> <b>Name:</b> Muhammad Asif Gillani <b>Designation:</b> Deputy Program Officer ESM <b>Organization:</b> PMDFC <b>Signature:</b> <b>Date:</b> 07-06-2023
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### INVOLUNTARY RESETTLEMENT SCREENING CHECKLIST

**Name of Enumerator/ESFP:** MO Planning

**Name of City/MC/LG:** MC Gojra

**Sub-Project Sector:** Sewerage

**Sub-Project Title:** Waste Water Treatment Plant Gojra City (55 Acre approx.)

**Sub- Project Categorization:**

S-1 ☒ S-2 ☐ S-3 ☐







**Date of Screening:** 07-06-2023

SECTION 1	Yes	No	Expected	Remarks
Does the project require land acquisition? Yes/No	✓			A state land is selected for the construction of Sub-Project. There will be inter-departmental transfer of state land required.
If yes, then describe the type of land being acquired from the categories below:	✓			No Land acquired for this sub project
Has any AED been conducted at the proposed location by the government1? Yes/No		✓		No AED conducted on proposed area.
Land (Quantify and describe types of land being acquired in "remarks column".	✓			Approximately 55 Acre of state land available and land requirement will be decided after WWTP design and sewerage network assessment.
Government and LG owned land free of occupation (agriculture or settlement)		✓		Government department (Revenue) owns the land.
Government or state-owned land (other than LG) free of occupation (agriculture or settlement)		✓		Government department (Revenue) owns the land but there are no crops, farms, Dera Jat, trees, tube wells present within premises of Sub-Project.
Private land		✓		No private land acquired for this project
Residential		✓		No Residential land acquired for this project
Commercial		✓		No Commercial land acquired for this project
Agricultural		✓		Barren Land and owned by Government department (Revenue) owns the land.
Communal		✓		No Land acquired for this sub project

Others (specify in "remarks").		✓		No Land acquired for this sub project
Name of owner/owners and type of ownership document if available.		✓		Land is selected but not but demarcation is in process.
If land is being acquired, describe any structures constructed on it				
Land-based assets:		✓		Barren Land and owned by Government department (Revenue) and used as landfill site area.
Residential structures		✓		Barren Land and owned by Government department (Revenue) and used as landfill site area.so these entities are not observed.
Commercial structures (specify in "remarks")				
Community structures (specify in "remarks")				
Agriculture structures (specify in "remarks")				
Public utilities (specify in "remarks")				
Others (specify in "remarks")				
If agricultural land is being acquired, specify the following:				
Agriculture related impacts		✓		Barren Land and owned by Government department (Revenue) and used as landfill site area
Crops and vegetables (specify types and cropping area in "remarks").		✓		Wheat, Sugar Cane, Tunnel Farming, Fodder observed.
Trees (specify number and types in "remarks").		✓		Not Observed in this sub project area
Others (specify in "remarks").		✓		
Affected Persons (APs)		✓		No Affected Persons (APs) are present so RAP are not Required
Will any people be displaced from the land when acquired? Yes/No		✓		No Affected Persons (APs) are present so RAP are not Required
Number of APs		✓		
Males				
Females		✓		
Titled land owners		✓		
Tenants and sharecroppers		✓		
Leaseholders		✓		
Agriculture wage laborers		✓		

Encroachers and squatters (specify in remarks column)		✓		Barren Land and owned by Government department (Revenue) and used as landfill site area.
Vulnerable APs (e.g. women headed households, minors and aged, orphans, disabled persons and those below the poverty line). Specify the number and vulnerability in "remarks".	✓			Negative impact observed on vulnerable groups like women labor and people in old age
Others (specify in "remarks")		✓		
How will people be affected?				

<b>Prepared By:</b> <b>Name:</b> Ihsan ul Haq Farooqi <b>Designation:</b> Senior Sociologist <b>Organization:</b> MM Pakistan <b>Signature:</b> <b>Date:</b> 07-06-2023	<b>Endorsed By:</b> <b>Name:</b> Muhammad Asad <b>Designation:</b> Municipal Officer Planning (MOP) <b>Organization:</b> MC Gojra <b>Signature:</b> <b>Date:</b> 07-06-2023	<b>Reviewed By:</b> <b>Name:</b> Hassan Ai <b>Designation:</b> Deputy Program Officer ESM <b>Organization:</b> PMDFC <b>Signature:</b> <b>Date:</b> 07-06-2023
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Pictures of Field Visit	
	
	
Public Consultation and pictorial view of WWTP Site at Mongi Bangla Road, Gojra	
	



Pictorial view of Stagnent rain water at WWTP Site, Gojra

<b>4. WWTP (Estimated Budget of ESMMP)</b>			
<b>Item</b>	<b>Quantity</b>	<b>Tentative Cost/Item- PKR./-</b>	<b>Total Cost</b>
<b>A-PPEs for Health and Safety of Labor/Workers</b>			
Face Masks (3 PLY) - box	50	300	15000
Safety Hard Helmets	30	3,000	90000
Safety Shoes	30	3,000	90000
Hand Gloves	30	1,000	30000
Ear Plugs	30	500	15000
Reflective Safety Vest	30	1,000	30000
Safety Goggles	30	500	15000
<b>B-Community Health and Safety</b>			<b>0</b>
First Aid Box Complete	4	10,000	40000
Infrared Thermometer (Benetech GM-2200 or equivalent)	1	40,000	40000
Safety Signs	20	15,000	300000
Safety Cones	19	1,000	19000
Safety Tapes	20	1,500	30000
Portable Delineator with chain	20	2,200	44000
Emergency Portable Lights	20	3,000	60000
Solid Waste Collection Drums with Cover	20	12,000	240000
Fire Fighting Equipment Purchase and refilling	3	10,000	30000
Hiring of Environmental Manager (for 02 years)	24	50,000	1200000
Pole Hanging Waste Bins	8	12,000	96000
Labor Campsite Management	1	770,000	770000
Water Sprinkling	1	300,000	300000
Social and Behavior Change Campaign and Labor Awareness/Training	1	250,000	250000
<b>C- Environment Quality Testing during Construction Phase</b>			<b>0</b>
Ambient Air Quality-Before, during, and after construction	12	85000	1020000
Noise Quality-Before, during, and after construction	12	1000	12000
Water Quality-Before, during, and after construction	12	22000	264000
D -Monitoring cost			<b>0</b>
Water Quality Analysis Lab Establishment at site to ensure treated water quality as per WHO/PEQs	Estimated Cost has been incorporated in the BOQ of Civil works of WWTP in rise of 2,000,000		<b>0</b>
<b>Total (PKR)-A+B+C</b>			<b>5,000,000</b>

(5)

**Environmental & Social Screening Checklist****Package 05 Supply of Liquid Waste Machinery****Instructions:**

Environmental and Social Focal Persons (ESFPs)<sup>15</sup> nominated by the MCs for PCP environmental and social management, will use this checklist in field for environmental and social screening and categorization of each and every sub-project proposed to be executed under the Program.

Deputy Program Officers-Environmental and Social Management deputed by PMDFC in regional offices will technically assist and support the ESFPs/MCs in filling in of this Checklist

It is to be attached with the main document<sup>16</sup> of sub-projects at planning stage and will be duly signed by the relevant ESFP and endorsed by the respective DPO-ESM

This checklist focuses on environmental issues and social concerns. To ensure that social dimensions are adequately considered, Involuntary Resettlement Screening Checklist will also be used

(iii) The purpose of this E&S Screening Checklists is to identify potential “Negative” impacts of environmental and social attributes or to enhance the existing environmental & social benefits. Use the “remarks” section to discuss any anticipated mitigation measures.

<b>Name of ESFP:</b>	<b>Muhammad Shah Rukh Tariq MOI (I&amp;S)</b>	
<b>Name of MC:</b>	<b>Gojra</b>	
<b>Sub-Project Sector:</b>	<b>Sewerage</b>	
<b>Sub-Project Title:</b>	Upgradation Of Sewerage System and Construction of Waste Water Treatment Plant (WWTP) Gojra City	
<b>Sub- Project Categorization:</b>	<b>E-1 ✓</b>	<b>S-1</b>
	<b>E-2</b>	<b>S-2 ✓</b>
	<b>E-3</b>	<b>S-3</b>
<b>Date of Screening:</b>	07-06-2023	
<b>Anticipated Project Activities</b>	Supply of Liquid Waste Machinery	
<b>Estimated Cost of Subprojects</b>	1460.25 million	
<b>Completion Time/Duration</b>	1 year	

<sup>15</sup> In all MCs, ESFPs are notified by Local government; MO (I&S) are focal persons for environmental sector and MO(P) are focal persons for social sectors.

<sup>16</sup> It is meant as PC-I and/or engineering estimates of sub-project

## CHECKLIST

Screening Questions	Yes	No	Remarks
<b>A. Project Siting</b>			
<b>Is the Sub-Project area adjacent to or within any of the following?</b>			
<b>Environmentally sensitive areas?</b>			
Legally protected Area		✓	No legally protected area lies within 200 meters jurisdiction of Sub-Project.
Any surface water body (river, canal, stream, lake, wetland) within 200 meters of the proposed sub project		✓	No water body observed within 200 meters in the Sub-Project area
Estuarine		✓	Not observed in sub project area
Special area for protecting biodiversity		✓	Not observed in sub project area
Buffer zone of protected area		✓	Not observed in sub project area
Mangroves Forest		✓	Not observed in sub project area
Man-made forest /game reserve, orchid /crops or any other area of environmental importance	✓		Not observed in sub project area
<b>Socially sensitive /important areas/communities/people?</b>			
Physical Cultural Resources (PCRs) and or any site of cultural/religious importance (Graveyard, Shrine, Mosque, Church, Gordwarah, Temple, Fort, archeological/historical site) within 100 m of the proposed subproject			
Sensitive receptors (Schools, colleges, Shrine, Mosque, Church, hospitals and clinics) within 100 meters of the proposed sub project	✓		Not observed in sub project area
Any graveyard of local community (Muslims or Christians)	✓		Not observed in sub project area
Any demographic or socio-economic aspects of the subproject area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, squatters, ethnic minorities, people with disabilities, people in old age, socially isolated		✓	Not observed in sub project area



segments <sup>17</sup> of the society and women or children)?			
Already existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means?		✓	No infrastructure will be dismantling due to construction activities.
B. Potential Environmental Impacts Will the Sub-Project cause...			
1. Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		✓	The proposed project site doesn't have any environmentally sensitive or protected areas.
2. Cutting of trees?		✓	No Cutting of trees involved during construction phase
3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?		✓	No significant adverse impacts on environment.
4. Generation of wastewater during construction or operation?		✓	No such impacts are envisaged.
5. Pollution of surface water/ground water due to wastewater discharge from construction site or due to direct/indirect disposal of wastewater?		✓	No such impacts are envisaged
6. Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers or due to increased soil erosion at construction site?		✓	No such impacts are envisaged
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction.		✓	No such impacts are envisaged
8. Over pumping of ground water, leading to salinization and ground subsidence?		✓	No such impacts are envisaged
9. Serious contamination of soil due to construction works?		✓	No such impacts are envisaged
10. Aggravation of solid waste problems in the area?		✓	No such impacts are envisaged
11. Generation of hazardous waste?		✓	No such impacts are envisaged
12. Increased air pollution due to sub-project construction and operation?		✓	No such impacts are envisaged

<sup>17</sup> Due to caste, creed, religion or gender e.g. transgender

13. Noise and vibration due to sub-project construction or operation?	✓		No such impacts are envisaged
14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?		✓	No such impacts are envisaged
15. Use of chemicals during construction?		✓	No chemicals will be used during construction activities
<b>C: Potential Social Impacts</b>			
Will the Sub-Project cause...			
4. Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?		✓	No impairment/damage to any PCR envisioned as per scope of construction activities
2. Displacement or involuntary resettlement of people?  (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		✓	Not observed in sub project area
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups 18(mentioned above)?		✓	No such impacts are envisaged
4. Temporary impediments in movements of people/transport and animals?	✓		No such impacts are envisaged
5. Large population influx during sub-project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	No such impacts are envisaged
6. Social conflicts if workers from other areas are hired.	✓		No such impacts are envisaged
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	✓		<p>By using liquid waste machinery biological Ergonomic and respiratory hazards may face by labor.</p> <ul style="list-style-type: none"> <li>• Providing appropriate personal protective equipment (PPE) for workers, such as gloves, eye protection, respirators, and chemical-resistant clothing.</li> <li>• Conducting regular training for workers on the safe operation</li> </ul>

<sup>18</sup> Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

			<p>of liquid waste machinery and proper handling of hazardous materials.</p> <ul style="list-style-type: none"> <li>Implementing engineering controls, such as splash guards, ventilation systems, and noise reduction measures, to minimize exposure to hazards.</li> <li>Implementing standard operating procedures (SOPs) for potential incidents involving liquid waste machinery.</li> <li>Regularly inspecting and maintaining machinery to ensure it is in safe working condition</li> </ul>
8. Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel, and other chemicals during construction and operation?	✓		Improperly managed liquid waste machinery can create breeding grounds for disease-carrying vectors, such as mosquitoes and rats, leading to the spread of vector-borne diseases in the community.
9. Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation, and decommissioning.		✓	
10. Any impact on sensitive receptors (mentioned above)		✓	Not observed in sub project area
11. Any impact of negative nature on already existing infrastructure including public amenities		✓	Not observed in sub project area

<b>Prepared By:</b> <b>Name:</b> Ihsan ul Haq Farooqi <b>Designation:</b> Senior Sociologist <b>Organization:</b> MM Pakistan <b>Signature:</b> <b>Date:</b> 07-06-2023	<b>Endorsed By:</b> <b>Name:</b> Shahrukh <b>Designation:</b> MOI&S <b>Organization:</b> MC Gojra <b>Signature:</b> <b>Date:</b> 07-06-2023	<b>Reviewed By:</b> <b>Name:</b> Asif Gillani <b>Designation:</b> Deputy Program Officer ESM <b>Organization:</b> PMDFC <b>Signature:</b> <b>Date:</b> 07-06-2023
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# **INVOLUNTARY RESETTLEMENT SCREENING CHECKLIST**

**Name of City/MC/LG: Gojra**

**Sub-Project Sector: Sewerage**

**Sub-Project Title: Supply of Liquid waste Machinery**

**Sub- Project Categorization: E-1 & S-2**

**Date of Screening: 07-06-2023**

SECTION 1	Yes	No	Expected	Remarks
Does the project require land acquisition? Yes/No		✓		Already Road exists and pipe line laying along the road. land owned by Govt so no land acquired for this sub project
If yes, then describe the type of land being acquired from the categories below:		✓		No Land acquired for this sub project
Has any AED been conducted at the proposed location by the government? Yes/No		✓		Not observed in sub project area and confirm by MC Staff also
Land (Quantify and describe types of land being acquired in “remarks column”.		✓		No Land acquired for this sub project
Government and LG owned land free of occupation (agriculture or settlement)		✓		Already land owned by govt so no land acquired for this sub project
Government or state-owned land (other than LG) free of occupation (agriculture or settlement)		✓		No Land acquired for this sub project. No government or state-owned land will be affected due to the implementation of the project
Private land		✓		Construction activities will be limited on streets, no additional private land will be required/ affect
Residential		✓		No residential structure or land will be affected due to the rehabilitation of sewerage lines
Commercial		✓		No Land acquired for this sub project
Agricultural		✓		No Land acquired for this sub project
Communal		✓		No Land acquired for this sub project
Others (specify in “remarks”).		✓		Already land owned by govt so no land acquired for this sub project

Name of owner/owners and type of ownership document if available.		✓		Already land owned by govt so no land acquired for this sub project
If land is being acquired, describe any structures constructed on it		✓		No Land acquired for this sub project
Land-based assets:		✓		No Land acquired for this sub project
Residential structures		✓		No Land acquired for this sub project
Commercial structures (specify in "remarks")		✓		No Land acquired for this sub project
Community structures (specify in "remarks")		✓		No Land acquired for this sub project
Agriculture structures (specify in "remarks")		✓		
Public utilities (specify in "remarks")	✓			Already land owned by govt so no land acquired for this sub project. Ramps are away from ROW.
Others (specify in "remarks")		✓		No Land acquired for this sub project
If agricultural land is being acquired, specify the following:		✓		No Land acquired for this sub project
Agriculture related impacts		✓		No Land acquired for this sub project
Crops and vegetables (specify types and cropping area in "remarks").		✓		No Land acquired for this sub project
Trees (specify number and types in "remarks").		✓		No Land acquired for this sub project
Others (specify in "remarks").		✓		No Land acquired for this sub project
Affected Persons (APs)		✓		No Persons Affected during this Project
Will any people be displaced from the land when acquired? Yes/No		✓		No Land acquired for this sub project
Number of APs		✓		No Persons Affected during this Project
Males		✓		No Persons Affected during this Project
Females		✓		No Persons Affected during this Project

Titled landowners		✓		No Land acquired for this sub project
Tenants and sharecroppers		✓		No Land acquired for this sub project
Leaseholders		✓		No Land acquired for this sub project
Agriculture wage laborers		✓		Not involved in this project
Encroachers and squatters (specify in remarks column)		✓		No Land acquired for this sub project
Vulnerable APs (e.g. women headed households, minors and aged, orphans, disabled persons, and those below the poverty line). Specify the number and vulnerability in "remarks".		✓		No Land acquired for this sub project no one effected during this this intervention
Others (specify in "remarks")		✓		Not involved in this project

<b>Prepared By:</b>	<b>Endorsed By:</b>	<b>Reviewed By:</b>
<b>Name:</b> Ihsan ul Haq Farooqi	<b>Name:</b> Muhammad Asad	<b>Name:</b> Hassan Ai
<b>Designation:</b> Senior Sociologist	<b>Designation:</b> Municipal Officer Planning (MOP)	<b>Designation:</b> Deputy Program Officer ESM
<b>Organization:</b> MM Pakistan	<b>Organization:</b> MC Gojra	<b>Organization:</b> PMDFC
<b>Signature:</b>	<b>Signature</b>	<b>Signature:</b>
<b>Date:</b> 07-06-2023	<b>Date:</b> 07-06-2023	<b>Date:</b> 07-06-2023

<b>5: Supply of Liquid Waste Machinery (Estimated Budget of ESMMP)</b>			
<b>Item</b>	<b>Quantity</b>	<b>Tentative Cost/Item- PKR./-</b>	<b>Total Cost</b>
<b>A-PPEs for Health and Safety of Labor/Workers</b>			
Face Masks (3 PLY) - box	5	300	1500
Safety Hard Helmets	5	3,000	15000
Safety Shoes	5	3,000	15000
Hand Gloves	5	1,000	5000
Ear Plugs	5	500	2500
Reflective Safety Vest	5	1,000	5000
Safety Goggles	5	500	2500
<b>Total (PKR)</b>			<b>46,500</b>

<b>Total Estimated Cost for Implementation of ESMMP</b>		
<b>Package</b>	<b>Subproject Component</b>	<b>Estimated Cost</b>
1.	Sewerage System	783000
2.	Disposal Station & Force main	1624000
3.	Providing & fixing of RPC Manhole Cover	46500
4.	Construction of Waste Water Treatment Plant	5,000,000
5.	Supply of Liquid waste machinery	46500
	<b>Total Estimated Cost for Implementation of ESMMP</b>	7500000



**ROUGH COST ESTIMATE FOR THE SEWERAGE SYSTEM BASED ON WASTE WATER TREATMENT PLANT  
FOR GOJRA DISTRICT T T SINGH.**

**Disposal Station**

No,s of Pumps proposed to be installed at disposal station.

3 set Non clogginh Horizontal centrifugal sullage pumps	=	8.0	Cuscec	=	3.00	x	8.00	=	24.0	Cuscec
									Total	= 24.0 Cuscec
BHP @ 62% effecency for each pump of 8.0 cusec against 75 ft.head	=	1.10	x	62.40	x	8.00	x	75.00	=	120.77 BHP
				550	x	0.62			Say	= 125.0 BHP

**Maintinance Charges for operation of disposal Station for 12 months.**

1	<b>Establishment charges for 1 year</b>		<b>Job</b>	<b>No,s</b>	<b>Month</b>	<b>Pay/ month</b>	<b>Amount</b>	
	Pay of Pump operator for 12 month	=	1.00	x	3	x	12.0	x 32000 = 1152000.0
	Pay of Electrition for 3 months month	=	1.00	x	1	x	3.0	x 32000 = 96000.0
	Pay of Machanic for 2 months month	=	1.00	x	1	x	1.5	x 32000 = 48000.0
	Pay of Chowkidar for 12 month	=	1.00	x	1	x	12.0	x 32000 = 384000.0
	<b>Total amount</b>	=					<b>Total</b>	<b>= 1680000.0</b>
2	<b>Electricity charges for 1 year</b>	<b>motor No,s</b>	<b>BHP</b>	<b>Hr,s</b>	<b>Watts</b>	<b>Days</b>	<b>Units</b>	
	Energy units for 3 No,s 100 BHP A.C Electric motors.	3.00	x	125	x	16.0	x	0.746 x 365 = 1633740.0
							<b>Total</b>	<b>= 1633740.0 Units</b>
	Take 1/3 for the first & 2nd years						1633740.0 x 0.333	<b>= 544580.0 Units</b>
		<b>Unit No,s</b>		<b>Rate</b>		<b>Amount</b>		
	<b>Amount</b>	=	544580	Units	@ 51.0	P.Unit	=	<b>27773580</b>
3	<b>Mechanical &amp; lubricant charges for 1 year</b>							
i	<b>Repair of machinery</b>	<b>Amount</b>	=	<b>Lump Sump</b>			=	<b>200000</b>
ii	<b>Provision for lubricants .</b>							
3	<b>Amount</b>	=	<b>Lump Sump</b>				=	<b>50000</b>
	<b>Total</b>						=	<b>250000.0</b>

**SUMMERY OF COST**

1	<b>Establishment charges for 1 year</b>	<b>Rs.</b>	<b>1680000.0</b>
2	<b>Electricity charges for 1 year</b>	<b>Rs.</b>	<b>27773580.0</b>
3	<b>Mechanical &amp; lubricant charges for 1 year</b>	<b>Rs.</b>	<b>250000.0</b>
	<b>Total</b>	<b>Rs.</b>	<b>29703580.0</b>
	Contigencies @ 2%	<b>Rs.</b>	<b>594071.6</b>
	PRA @ 5%	<b>Rs.</b>	<b>1485179.0</b>
	<b>Total</b>	<b>Rs.</b>	<b>31782830.6</b>
	<b>Total in Million</b>	<b>Rs.</b>	<b>31.8</b>

**Maintinance Charges for operation of Waste Water Treatment Plant for 12 months.**

1	<b>Establishment charges for 1 year</b>	<b>Job</b>	<b>No,s</b>	<b>Month</b>	<b>Pay/ month</b>	<b>Amount</b>	
	Pay of Lab tehnision for 12 month	=	1.00	x	1	x	12.0 x 40000 = 480000.0
	Pay of office clerk for 12 month	=	1.00	x	1	x	12.0 x 40000 = 480000.0
	Pay of Office boy month	=	1.00	x	1	x	12.0 x 32000 = 384000.0
	Pay of lubricator for 1 months month	=	1.00	x	1	x	1.0 x 32000 = 32000.0
	Pay of Chowkidar for 12 month	=	1.00	x	2	x	12.0 x 32000 = 768000.0
	<b>Total amount</b>	=				<b>Total</b>	<b>= 2144000.0</b>
2	<b>Electricity charges for 1 year</b>	<b>motor No,s</b>	<b>Load</b>	<b>Hr,s</b>	<b>Watts</b>	<b>Days</b>	<b>Units</b>
	Energy units.		10	x	24.0	x	0.746 x 365 = 65349.6
						<b>Total</b>	<b>= 65349.6 Units</b>

Take 1/3 for the first & 2nd years		65349.6		x	0.333	=	21783.2	Units
		Unit No,s		Rate			Amount	
Amount	=	21783	Units	@	51.0	P.Unit	=	1110943
ii Provision for lubricants .								
3	=	Lump Sump					=	5000
						Total	=	5000.0

SUMMERY OF COST

1 Establishment charges for 1 year	Rs.	2144000.0
2 Electricity charges for 1 year	Rs.	1110943.2
3 Mechenical & lubricant charges for 1 year	Rs.	5000.0
	Total	Rs. 3259943.2
Contigencies @ 2%	Rs.	65198.9
PRA @ 5%	Rs.	162997.2
	Total	Rs. 3488139.2
Total in Million	Rs.	3.5
Grand Total in Million	Rs.	35.271

## **ANNEXURE-F**

### **DESIGN AND DRAWINGS**

# HYDRAULIC STATEMENT TRUNK SEWER GOJRA CITY

Zone	NODE	Length of Line (in ft)	Area (acre)			Population (No's) @ 85 person/acr e	Consumption in gallong @ 40 GPCD	Avg. Sew. Flow (in cusec)	Peak Factor	Peak Flow (in cusec)	Infiltration @ 5% of average flow (in cusec)	Storm Allow 50% of peak flow (in cusec)	Design Flow (in cusec)	Proposed Dia (inches)	Velocity ft/sec	Capacity of proposed dia (inch)	Grade of Sewer  ft/ft	Road Levels		Invert Elevation		Elev difference	
			online	Previous	TOTAL													u/s MH	d/s MH	u/s MH	d/s MH	u/s MH	d/s MH
																		ft	ft	s	ft	ft	ft
Zone C i t y	A4-A3	560	26.03		26.03	2,213	88,502	0.14	4.50	0.63	0.00698	0.31	0.95	15	2.50	3.07	0.00227	572.65	572.20	565.15	563.88	7.50	8.32
	A3-A2	521	30.14	26.03	56.17	4,774	190,978	0.30	4.50	1.35	0.01505	0.68	2.05	15	2.50	3.07	0.00227	572.20	567.93	563.63	562.45	8.57	5.48
	A2-A	1,010	74.39	56.17	130.56	11,098	443,904	0.70	4.00	2.80	0.03499	1.40	4.23	21	2.50	6.01	0.00145	567.93	568.56	559.95	558.48	7.98	10.08
	A1-A	1,520	137.15		137.15	11,658	466,310	0.74	4.00	2.94	0.03676	1.47	4.45	24	2.50	7.85	0.00121	569.40	568.68	558.27	556.43	11.13	12.25
	A-B	2,408	49.14	267.71	316.85	26,932	1,077,290	1.70	3.50	5.94	0.08492	2.97	9.00	27	2.50	9.94	0.00103	568.68	563.14	556.18	553.70	12.50	9.44
	B1-B	2,867	137.51		137.51	11,688	467,534	0.74	4.00	2.95	0.03686	1.47	4.46	24	2.50	7.85	0.00121	566.90	563.14	557.42	553.95	9.50	9.19
	B-C	2,105	42.52	454.36	496.88	42,235	1,689,392	2.66	3.00	7.99	0.13317	4.00	12.12	30	2.50	12.27	0.00089	563.14	565.19	553.45	551.58	9.69	13.61
	C-D	2,080	45.35	496.88	542.23	46,090	1,843,582	2.91	3.00	8.72	0.14533	4.36	13.22	36	2.50	17.66	0.00079	565.19	558.76	551.08	549.43	14.11	9.33
	D2-D1	588	23.16		23.16	1,969	78,744	0.12	4.50	0.56	0.00621	0.28	0.84	15	2.50	3.07	0.00227	559.60	558.04	553.35	552.02	6.25	6.02
	D1-D	978	31.74	23.16	54.90	4,667	186,660	0.29	4.50	1.32	0.01471	0.66	2.00	15	2.50	3.07	0.00227	558.04	558.76	551.77	549.55	6.27	9.21
	D-E	167		597.13	597.13	50,756	2,030,242	3.20	3.00	9.60	0.16004	4.80	14.56	36	2.50	17.66	0.00070	558.76	560.25	549.43	549.32	9.33	10.93
	E-F1	838	2.00	597.13	599.13	50,926	2,037,042	3.21	3.00	9.63	0.16058	4.82	14.61	36	2.50	17.66	0.00070	560.25	565.77	549.32	548.73	10.93	17.04
	F3-F1	943	28.17		28.17	2,394	95,778	0.15	4.50	0.68	0.00755	0.34	1.03	15	2.50	3.07	0.00227	566.90	565.77	558.90	556.76	8.00	9.01
	F1-F2	484	23.65	627.30	650.95	55,331	2,213,230	3.49	3.00	10.47	0.17447	5.23	15.88	36	2.50	17.66	0.00070	565.77	562.97	548.73	548.39	17.04	14.58
	F5-F4	777	32.15		32.15	2,733	109,310	0.17	3.00	0.52	0.00862	0.26	0.78	15	2.50	3.07	0.00227	563.77	562.97	556.76	555.00	7.01	7.97
	F4-F2	921	33.34	32.15	65.49	5,567	222,666	61.12		61.12	3.05600	30.56	94.74	18	2.50	4.42	0.00178	563.37	562.97	554.75	553.11	8.62	9.86
	F2-F	360	8.15	716.44	724.59	61,590	2,463,606	3.88	3.00	11.65	0.19421	5.83	17.67	36	2.50	17.66	0.00227	562.97	562.77	548.39	547.57	14.58	15.20
	F-G	2,265	36.41	724.59	761.00	64,685	2,587,400	4.08	3.00	12.24	0.20396	6.12	18.56	42	2.50	24.04	0.00057	562.77	560.38	547.07	545.78	15.70	14.60
	G3-G2	475	18.65		18.65	1,585	63,410	0.10	4.50	0.45	0.00500	0.22	0.68	15	2.50	3.07	0.00227	564.45	565.05	558.45	557.37	6.00	7.68
	G2-G1	780	15.23	18.65	33.88	2,880	115,192	0.18	4.50	0.82	0.00908	0.41	1.23	15	2.50	3.07	0.00227	565.05	565.09	557.37	555.60	7.68	9.49
	G1-G	1,275	21.15	33.88	55.03	4,678	187,102	0.29	4.50	1.33	0.01475	0.66	2.01	18	2.50	4.42	0.00178	565.09	560.38	555.60	553.33	9.49	7.05
	G6-G5	525	23.21		23.21	1,973	78,914	0.12	4.50	0.56	0.00622	0.28	0.85	15	2.50	3.07	0.00227	563.35	563.03	557.35	556.16	6.00	6.87
	G5-G4	595	34.09	23.21	57.30	4,871	194,820	0.31	4.50	1.38	0.01536	0.69	2.09	15	2.50	3.07	0.00227	563.03	562.87	555.91	554.56	7.12	8.31
	G4-G	1,323	40.16	57.30	97.46	8,284	331,364	0.52	4.00	2.09	0.02612	1.04	3.16	18	2.50	4.42	0.00178	562.87	560.38	554.31	551.95	8.56	8.43
	G-H	1,275	73.08	858.46	931.54	79,181	3,167,236	4.99	2.50	12.48	0.24967	6.24	18.98	42	2.50	24.04	0.00057	560.38	557.04	545.78	545.06	14.60	11.98
	H-D/W	3,390	78.63	931.54	1010.17	85,864	3,434,578	5.41	2.50	13.54	0.27075	6.77	20.58	42	2.50	24.04	0.00057	557.04	557.03	545.06	543.12	11.98	13.91

## DESIGN OF SEWAGE PUMPING STATION GOJRA

S #	Description	calculation	Unit
<b>A</b>	<b>FLOW</b>		
	Population	85904	Person
	Av. Dry weather flow @ 40 GPCD                      40	5.42	Cusec
	Peak factor	2.5	
	Peak flow	13.54	Cusec
	Storm water allowance @50% of peak flow	6.77	Cusec
	Total	20.32	Cusec
	Say	20.5	Cusec
<b>B</b>	<b>SCREENING CHAMBER</b>		
	Two time of flow area $2*3.14*(d)^2/4$	19.23	ft <sup>2</sup>
	Depth of water contact to screen	3.00	ft
	Clear width of screen	6.41	ft
	spacing of screen	2.00	Inch C/C
	No. of opening	38.47	
	Say	39.00	
	Thickness of stirupps	0.38	inch
	Area covered by stirupps	1.22	ft
	Total	7.63	ft
	Say	7.75	ft
	Depth of screen NSL to Bed level	13.91	ft
	Up to Top level	16.88	ft
<b>C</b>	<b>WET WELL</b>		
	Peak flow	20.5	Cusec
	Proposed retention period	5	Minutes
	Maximum flow ft <sup>3</sup> per minuts	1230	
	Proposed capacity of Tank required for retention	6150	ft <sup>3</sup>
	Working depth	6.5	ft
	Surface area of Tank	946.15	ft <sup>2</sup>
	No. of tank proposed	1	
	Dia of Tank $d=VA*4/3.14$	34.72	ft
	Say	35	ft

## DESIGN OF SEWAGE PUMPING STATION GOJRA

S #	Description	calculation	Unit
	Depth of Tank		
	NSL	557.03	
	Bed Level	535.25	
	Depth from NSL	21.78	
	Depth up to top level (560)	24.75	
<b>D</b>	<b>FORCE MAIN</b>		
	Discharge	13.54	Cusec
	Proposed dia of line	630	mm
	Type of Material	HDPE	
	proposed veloscity	4.5	ft/sec
	Classification of Pipe	PN-8	
	Head Losses per ft run $V=1.318*n*r^{0.63}*s^{0.54}$		
	V	5.96	
	n=	140	
	$r^{.63}$	0.646	
	$s^{0.54}$	0.050000034	
	s	0.0023	
	Length of force main	15095	Rft
	Head Losses	34.7185	ft
	Head losses specials, fixtures & others	2.28	
	Level difference	6	ft
	Total	43.00	ft
	Say	43.00	ft
	Capacity of proposed	14.13	Cusec
<b>E</b>	<b>PUMPING MACHINERY</b>		
	Proposed size of pump	8	Cusec
	Ultimate discharge	20.5	Cusec
	No. & capacity of pumps		
	8 Cusec	3	No

DESIGN OF SEWAGE PUMPING STATION GOJRA

S #	Description	calculation	Unit
F	HEAD OF MACHIERY		
	Suction lift	6.5	ft
	Depth from NSL to suction of pump	18.65	ft
	Fixtures and special losses	1.85	ft
	Losses of force main	43	ft
	Total Losses	70	ft
	Proposed Head pump	75	ft

DESIGN OF CONCRETE PLUG FOR SEWAGE PUMPING STATION GOJRA CITY

S #	Description	calculation	Unit
1	Screening chamber		
	NSL	557.03	ft
	Water level	549.03	ft
	Invert level of screening chamber	543.12	ft
	Structure under water	5.91	ft
	Pressure of water	368.784	
	Requirement of concete plug		
	PCC 1:2:4	120	lb/cft
	Depth of concrete		
	water pressure = wt of concrete x 1.5	3.07	depth
	50% safety factor	50	%
	Total depth of concrete	4.61	ft
	Say	4.75	ft
2	Wet well		
	NSL	557.03	ft
	Water level	549.03	ft
	Invert level of screening chamber	535.25	ft
	Structure under water	13.78	ft
	Pressure of water	859.872	
	Requirement of concete plug		
	PCC 1:2:4	120	lb/cft
	Depth of concrete		
	water pressure = wt of concrete x 1.5	7.17	depth
	50% safety factor	50	%
	Total depth of concrete	10.75	ft
	Say	10.75	ft
3	Pumping chamber		
	NSL	557.03	ft
	Water level	549.03	ft
	Invert level of screening chamber	542	ft
	Structure under water	7.03	ft
	Pressure of water	438.672	
	Requirement of concete plug		
	PCC 1:2:4	120	lb/cft
	Depth of concrete		
	water pressure = wt of concrete x 1.5	3.66	depth
	50% safety factor	50	%
	Total depth of concrete	5.48	ft
	Say	5.50	ft



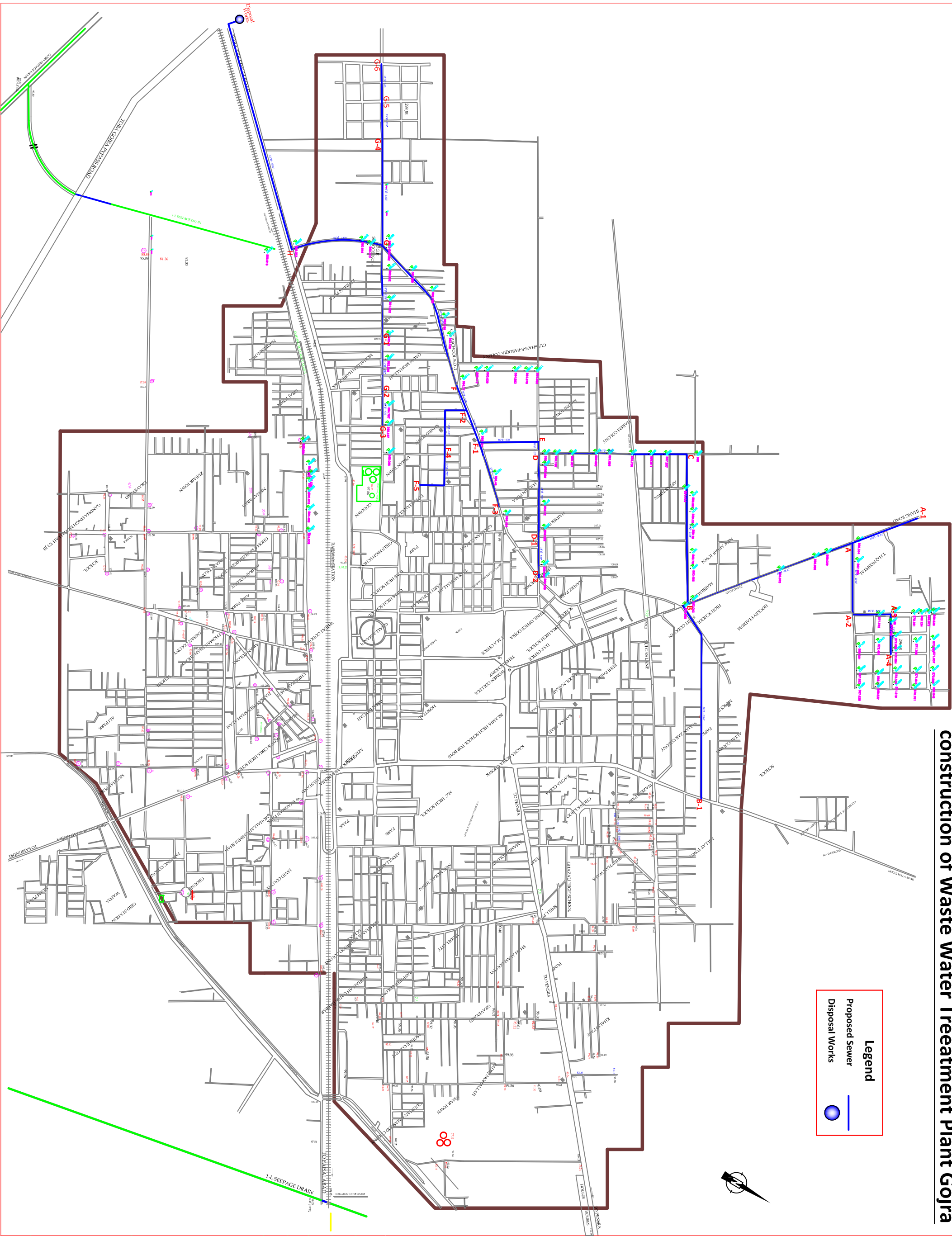
DESIGN OF WASTEWATER TREATMENT PLANT GOJRA				
A	INLET CHAMBER			
	Av. flow		5.5	Cusec
	Capacity / Av. Flow		3.0	mgd
	Peak Flow		13.54	Cusec
	Minimum Flow 50%		1.5	mgd
			6.77	Cusec
	Retention period		20	sec
	Volume		270.80	ft <sup>3</sup>
	Water depth taken		2.25	ft
	Area required (proposed circular)		120.36	ft <sup>2</sup>
	Dia of tank		12.38	ft
	Say		12.50	ft
B	COURSE SCREEN			
	Capacity / Av. Flow		3	mgd
	Peak Flow		13.54	Cusec
	Minimum Flow 50%		1.5	mgd
			6.77	Cusec
	Width of Channel		2.5	ft
	Depth of water		2.25	ft
	Velocity		2.41	ft/sec
	Area contact to screen		8.44	ft <sup>2</sup>
	X-sectional		5.63	ft <sup>2</sup>
	Clear width of screen		2.5	ft
	Spacing of opening		30	inches
	Spacing of opening		2	inch c/c
	No. opening required		15	No.
	Thickness of strip to be used		0.38	inch
	Area required		5.63	inches
	Overall width		35.63	inches
			2.97	ft
	say		3.00	ft
C	FINE SCREEN			
	No. of battery		2	No.
	velocity through screen assumed		2.41	ft/sec
	Area		5.62	ft <sup>2</sup>
	Depth of water		2.25	ft
	Area of opening required		2.50	ft
			29.96	inches
	Spacing		0.58	inches
	No. of opening required		52	No.
	Strip thickness		0.375	inch
	Area cover by bar		19.37	inch

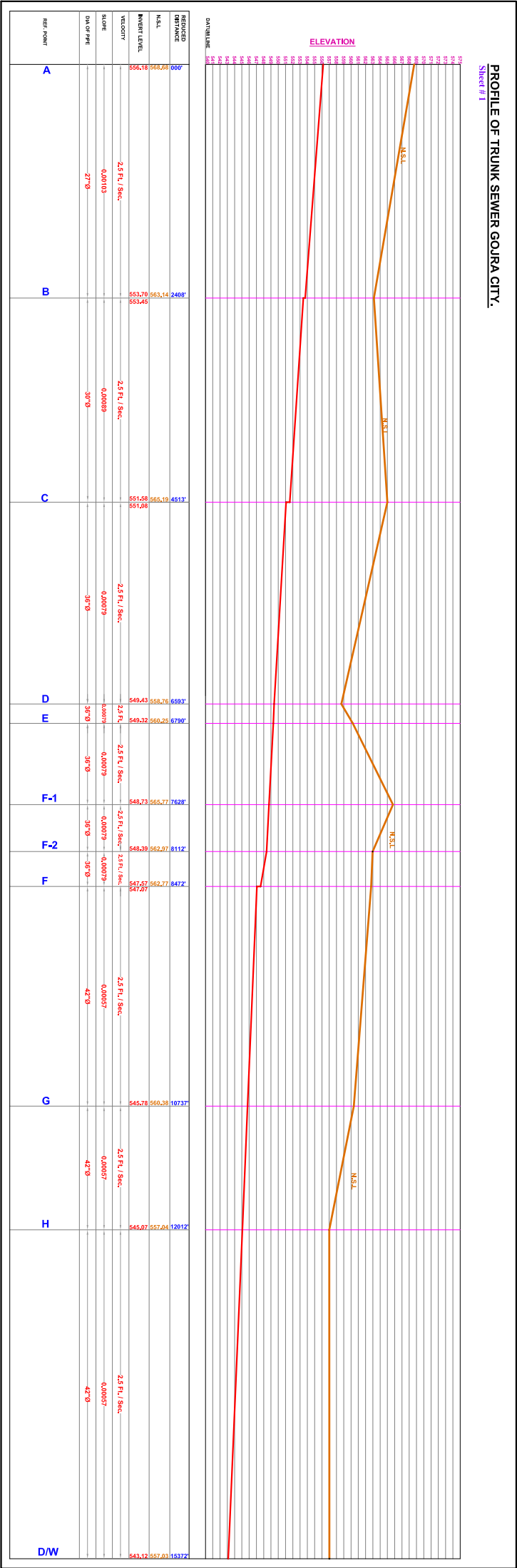
	Opening		53	
	Clear opening area		30.54	inch
	Total width of screen / Channel		49.92	inch
			4.16	ft
	Say		4.25	ft
	Velocity in screen		2.32	ft/sec
<b>D</b>	<b>GRIT CHAMBER</b>			
	Peak discharge		13.54	Cusec
	Q		0.383	m <sup>3</sup> /s
	Depth of water		2.25	ft
	D		0.69	m
	In grit chamber taking constant velocity for varrient discharge. Let us assume V <sub>h</sub> Horizontal velocity Ranging from 0.15 to 0.3 m/s	0.2	0.2	m/s
	Detntion time		?	
	Perticular size	0.2		mm
	Specific gravity	2.65		
	On basis of this assume V <sub>s</sub> setting velocity	0.02		m/s
	Area Q=Area*velocity (Hori)		1.92	m <sup>2</sup>
	Free Board		0.25	m
	Grit accumulation Ranging (0.15to 0.45)	0.45		m
	Area A= Width * Depth			
	d=0.69	0.69		
	W		2.78	m
	For setting particular, depth in the distance, in setting velocity V <sub>s</sub> =depth of water/detention time			
	Detention time		34.29	sec
	Detention time should be ranging from 45 to 90 sec hence we taken		50	sec
	Now V <sub>h</sub> = Length/dentention time			
	Length		10	m
	Ref: Duncan Mara lenth ranging 10d to 20d i.e ok			
<b>E</b>	<b>ANAROBIC PONDS</b>			
i	Discharge		5.5	cusec
ii	Total volume of sewage		475200	ft <sup>3</sup> /day
			13455	m <sup>3</sup> /day
iii	Aera of Anarobic Pond			
	$A_a = L_1 Q / \delta_s * D_a$			
	A <sub>a</sub>			
	L <sub>1</sub> = BOD i.e =300 mg/lit	300		
	Q = Volume of effluent 10.1			
	T= 20° C Average in Pakistan during cold weather			
	$\delta = (20*20) - 100 = 300$	300		
	Ref: Duncun Mara Book Table 10.1			
	D <sub>0</sub> = Depth of effluent taken = 3.5m	3		

	$A_a$		4484.84	$m^2$
			48274.80	$ft^2$
iv	To check the retention period			
	$\vartheta_a = A_a D_a / Q$		1.00	day
	Removal of sludge (2 T +20)%	60%		
	Ref: Table 10.2 Duncan Mara Book			
v	No of Ponds	4		
	Standby	1		
	Working	3		
	Area of each Anarobic pond		16091.60	$ft^2$
vi	Assume it Mid span area			
vii	Proposed Slop	2.5:1		
vii	Free board	2		ft
viii	proposed length in mid span		150	ft
ix	Width in mid span		107	ft
x	Water depth taken	3		m
		10		ft
xi	Free board	2		ft
xii	Depth above mid span	6.92		ft
xiii	one slop	17.30		
xiv	Total slop	34.61		
xv	Say	35		ft
xvi	Total length at of pond		185	ft
xvii	Total width at of pond		142	ft
xviii	Depth of pond		12	ft
xvii	Add allownce for accmulation of sludge		3	ft
xv	Total depth of Tank		15	ft
<b>F</b>	<b>FACULTATIVE PONDS</b>			
i	No of ponds		4	
ii	No of series		2	
ii	Discharge		5.5	cusec
vi	Total volume of sewage		475200	$ft^3/day$
			13454.51	$m^3/day$
vi	$A_f = 10 L_i Q / \delta_s$			
	$A_f$ = Area of faculative Ponds			
	$L_i$ = BOD entering in Facultative Ponds	180	120	mg/l
	$Q$ = Volume of effluent			
	$T = 20^\circ$ Average in Pakistan during cold weather			
	$\delta_s = (20 \times 20) - 100 = 300$	300		
vi	$A_f$		53818.06	$m^2$
	= Retention period			
	$\vartheta_f = 2 A_f D_f / 2Q - (0.001 e A_f)$			
	$D$ = depth of Liquid	2		m

	e = 5	5		
vii	$\theta_f$		8	days
vii	in each battery		4	days
	Ref: Eq. 11.7 Duncan Mara Book Minimum value of $\theta_f$ = 5 days at 20 0C temp			
	then:			
	$A_f = 2Q\theta_f / (2D + 0.001e\theta_f)$			
	e = 5	5		
	$\theta_f = 5.5$	5.5		
viii	$A_f$		36747.28	m <sup>2</sup>
ix	Area at mid span		18373.64	m <sup>2</sup>
			197773.85	ft <sup>2</sup>
x	Proposed length of FP at mid span		650	
xi	width		304	
xi	Length at top			
xii	Slop	2.5:1		
xiii	Depth of water from mid span	3.28		ft
xiv	Free board	2		ft
xv	Total hiegt from mid depth	5.28		ft
xvi	Add slop slop length		13.2	ft
xvii	Take two side		26.4	ft
xviii	say		27	ft
xviii	by adding slop lenth top length of tank become		677	ft
xv	by adding slop lenth top width of tank become		331	ft
	Removal of BOD			
	$Le(\text{unfiltered}) = Li / (1 + k_1 \theta_f)$			
	$k_1 = 0.1$ design value for secondary facultative pond	0.1		
	$Le(\text{unfiltered})$		77.4	mg/l
	$Le(\text{filtered}) = F_{na} * (Le(\text{unfiltered}))$			
	$F_{na}$ is non algal fraction of the BOD and it ranges between (0.1-0.3) , usual design value is 0.3	0.3		
	$Le(\text{filtered})$		23.2	mg/l
			O.K.	

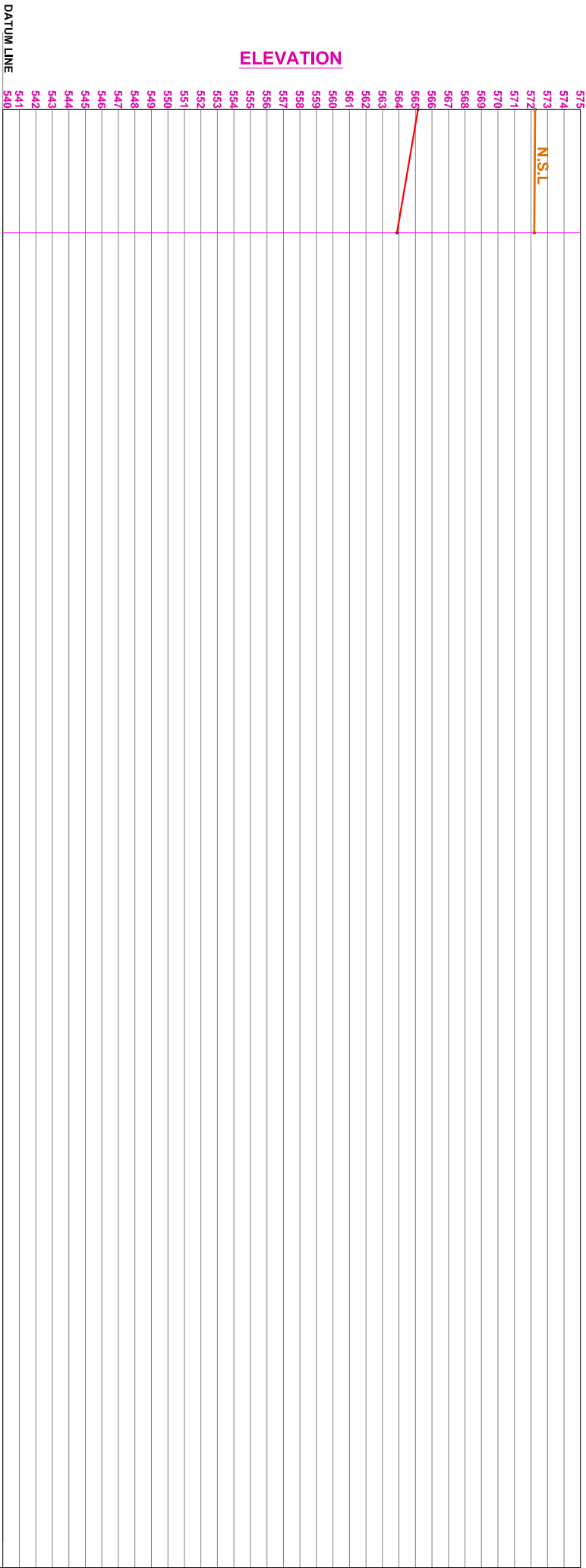
## **Upgradation of Sewerage System and construction of Waste Water Treatment Plant Gojira**





PROFILE OF MAIN SEWER GOJRA CITY.

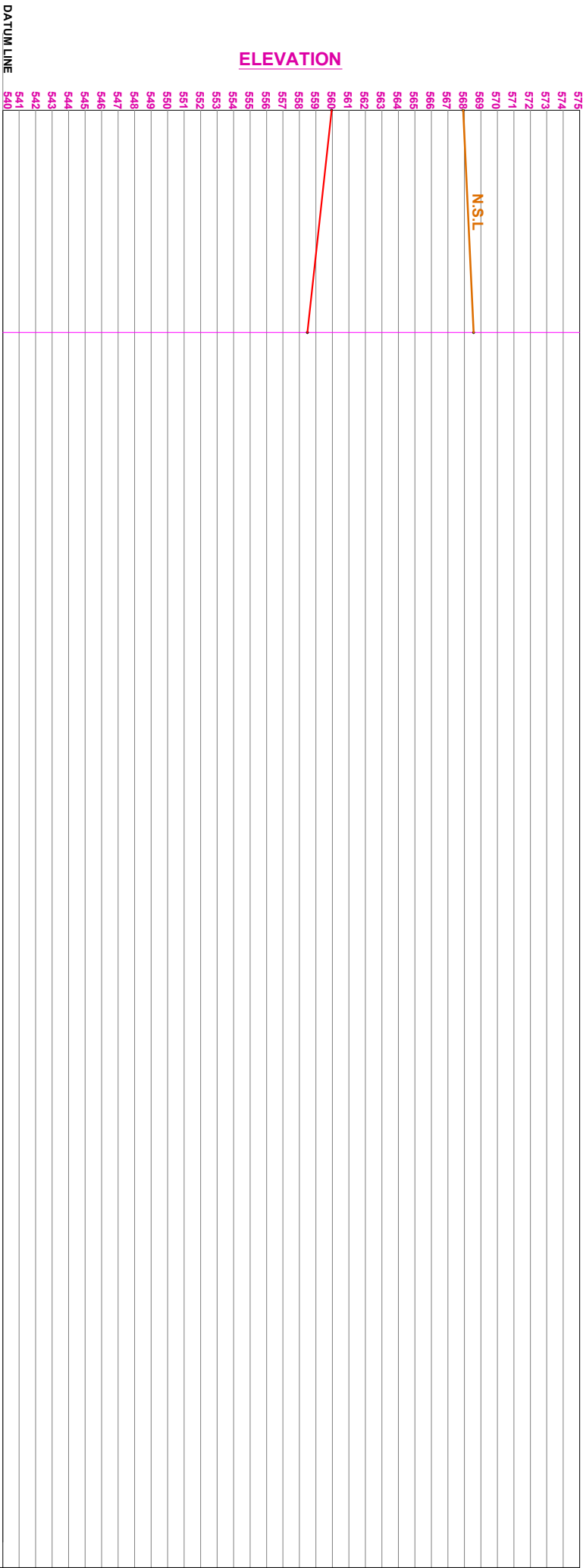
A4-A3



REF. POINT	A-4	A-3
DIA OF PIPE	15"Ø	
SLOPE	0.00227	
VELOCITY	2.5 Ft. / Sec.	
INVERT LEVEL	565.15	563.88
N.S.L	572.65	572.20
REDUCED DISTANCE	000'	560'

PROFILE OF MAIN SEWER GOJRA CITY.

A2-A

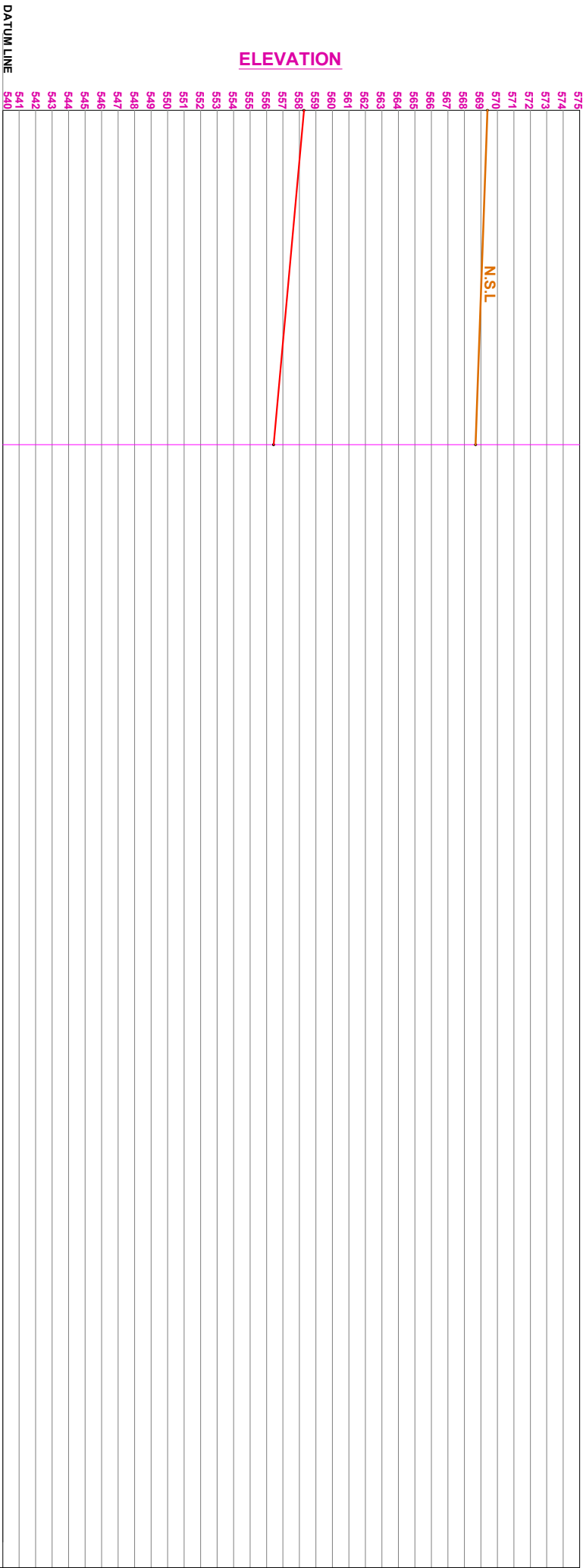


REDUCED DISTANCE	000'	1010'
N.S.L.	567.93	568.56
INVERT LEVEL	559.95	558.48
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00145	
DIA OF PIPE	21"Ø	
REF. POINT	A-2	A



PROFILE OF MAIN SEWER GOJRA CITY.

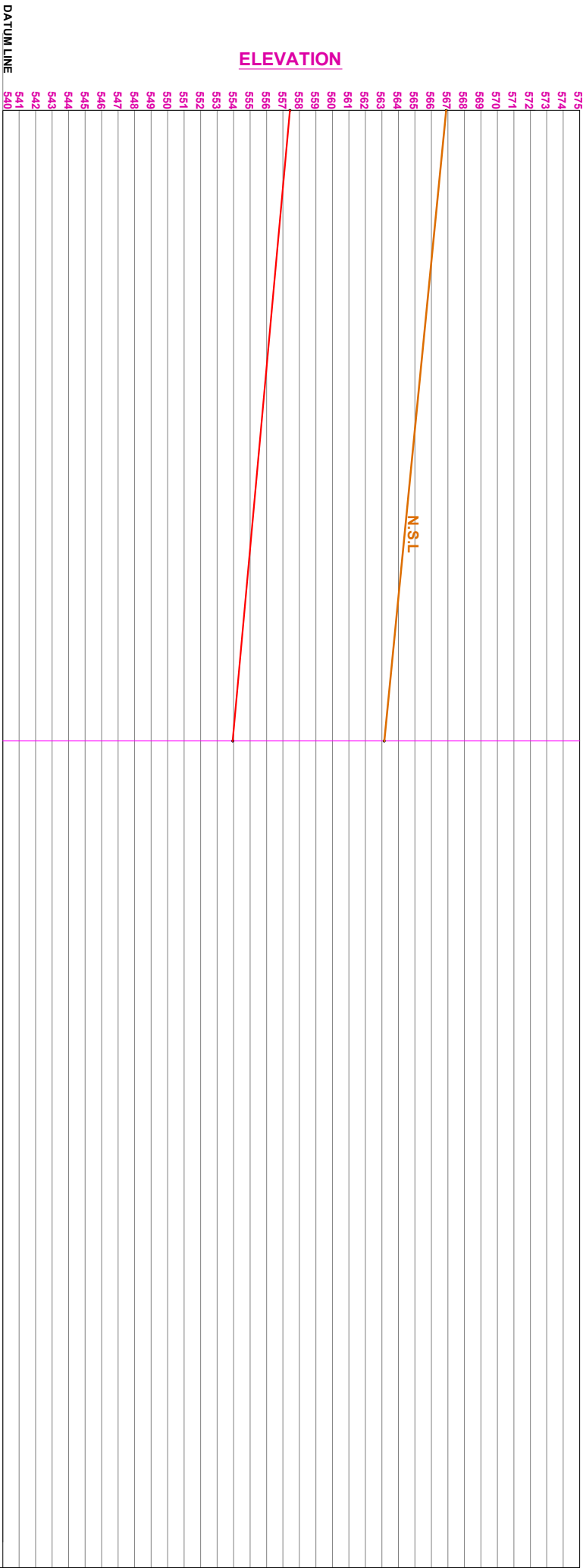
AI-A



REDUCED DISTANCE	000'	1520'
N.S.L.	569.40	568.68
INVERT LEVEL	558.27	556.43
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00121	
DIA OF PIPE	24"Ø	
REF. POINT	A-1	A

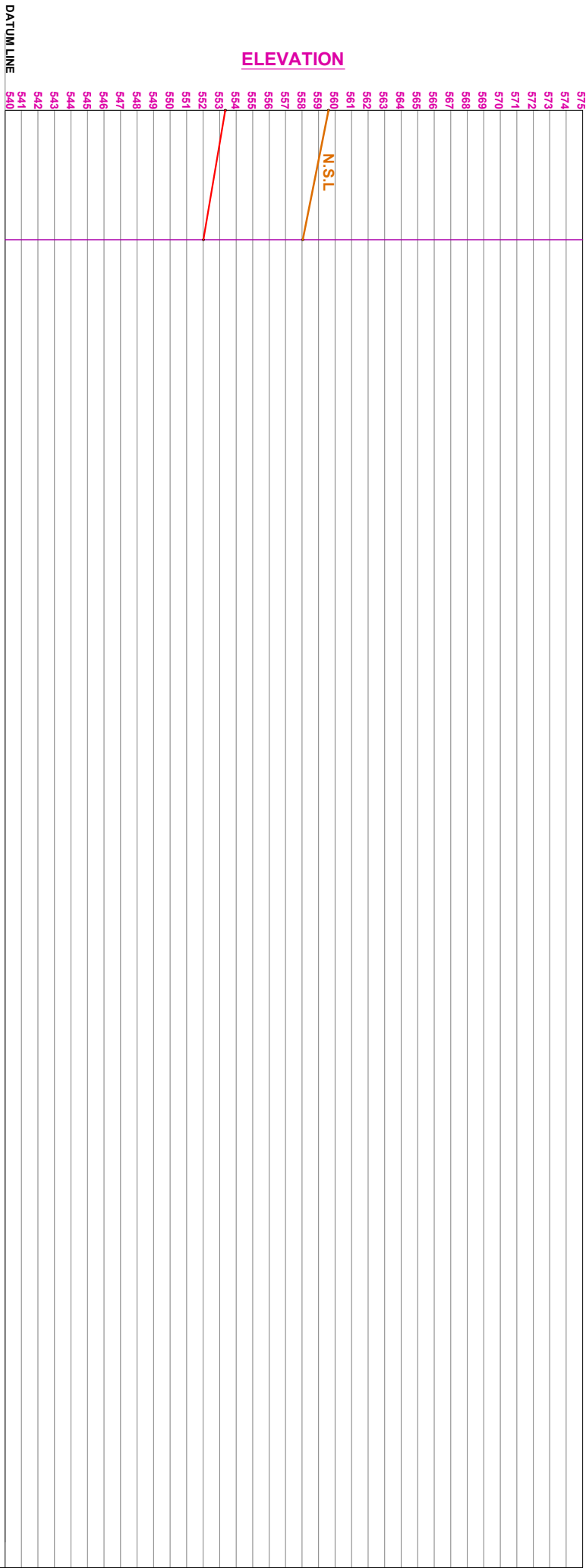
PROFILE OF MAIN SEWER GOJRA CITY.

B1-B



REDUCED DISTANCE	000'	2867'
N.S.L.	566.90	563.14
INVERT LEVEL	557.42	553.95
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00121	
DIA OF PIPE	24"Ø	
REF. POINT	B-1	B

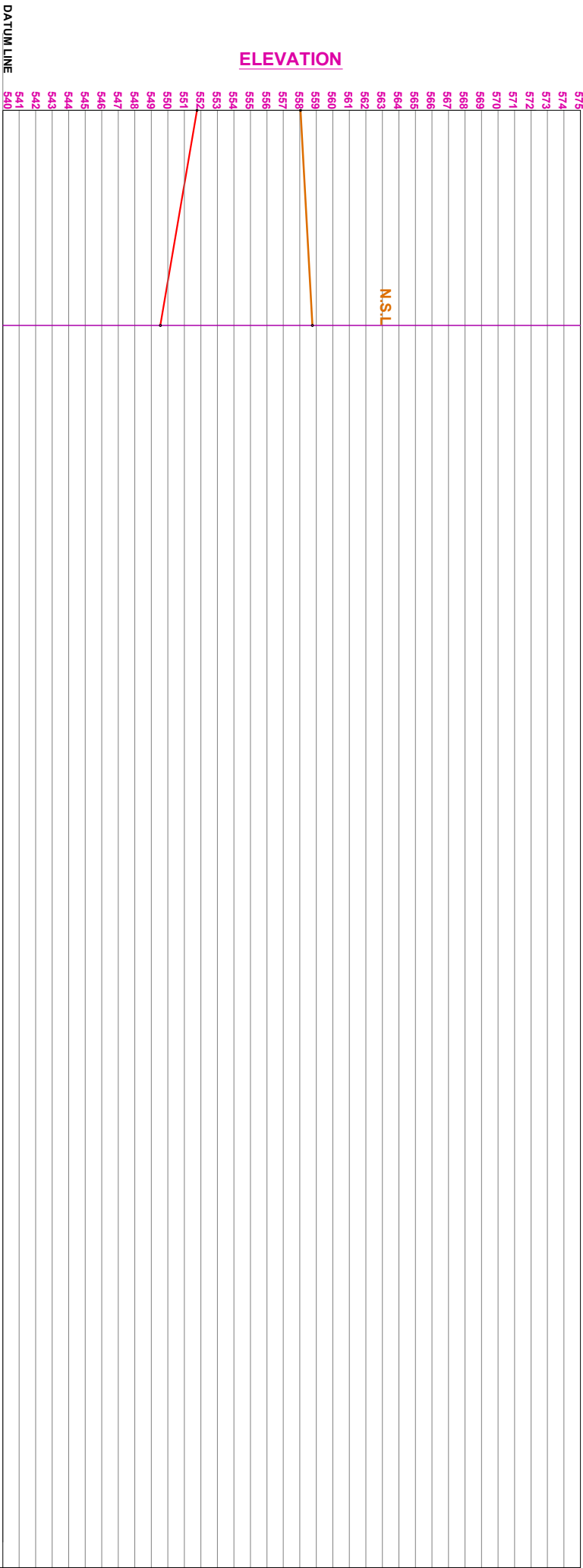
PROFILE OF MAIN SEWER GOJRA CITY.  
D2-D1



REDUCED DISTANCE	000'	
N.S.L.	559.60	558.04
INVERT LEVEL	553.35	552.02
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00227	
DIA OF PIPE	15"Ø	
REF. POINT	D-2	D-1

PROFILE OF MAIN SEWER GOJRA CITY.

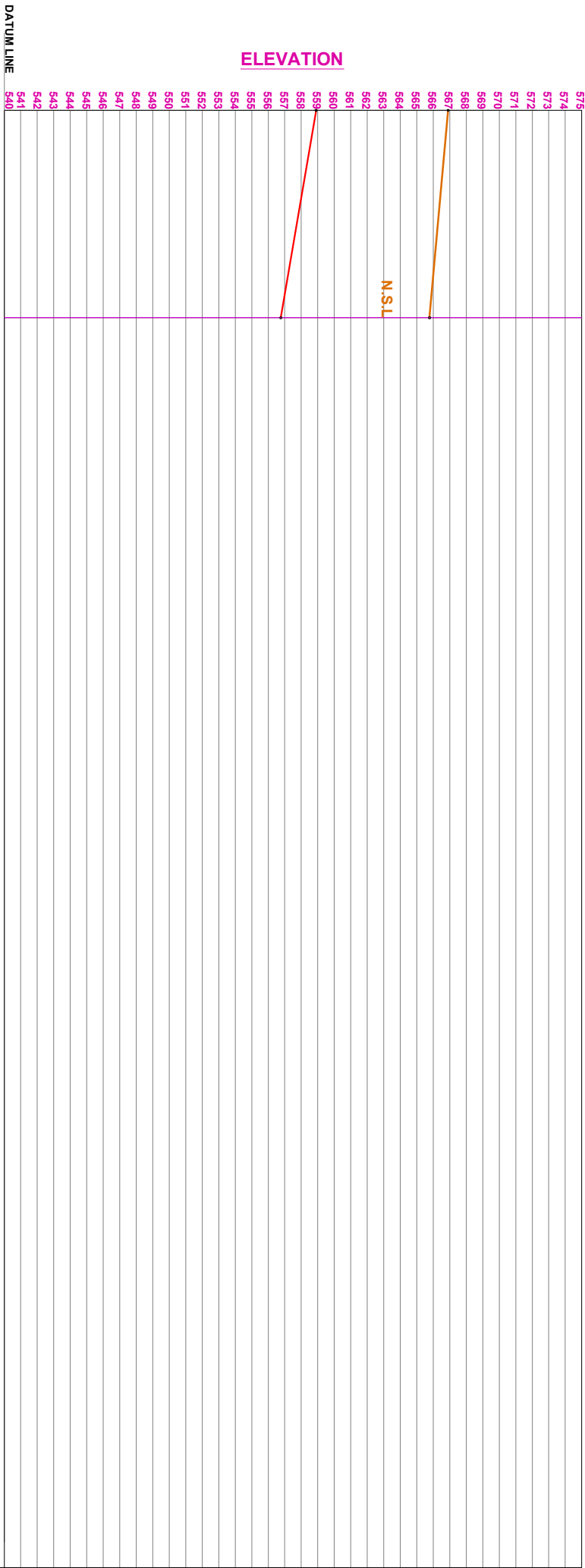
D1-D



REDUCED DISTANCE	000'	978'
N.S.L	558.04	558.76
INVERT LEVEL	551.77	549.55
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00227	
DIA OF PIPE	15"Ø	
REF. POINT	D-1	D

PROFILE OF MAIN SEWER GOJRA CITY.

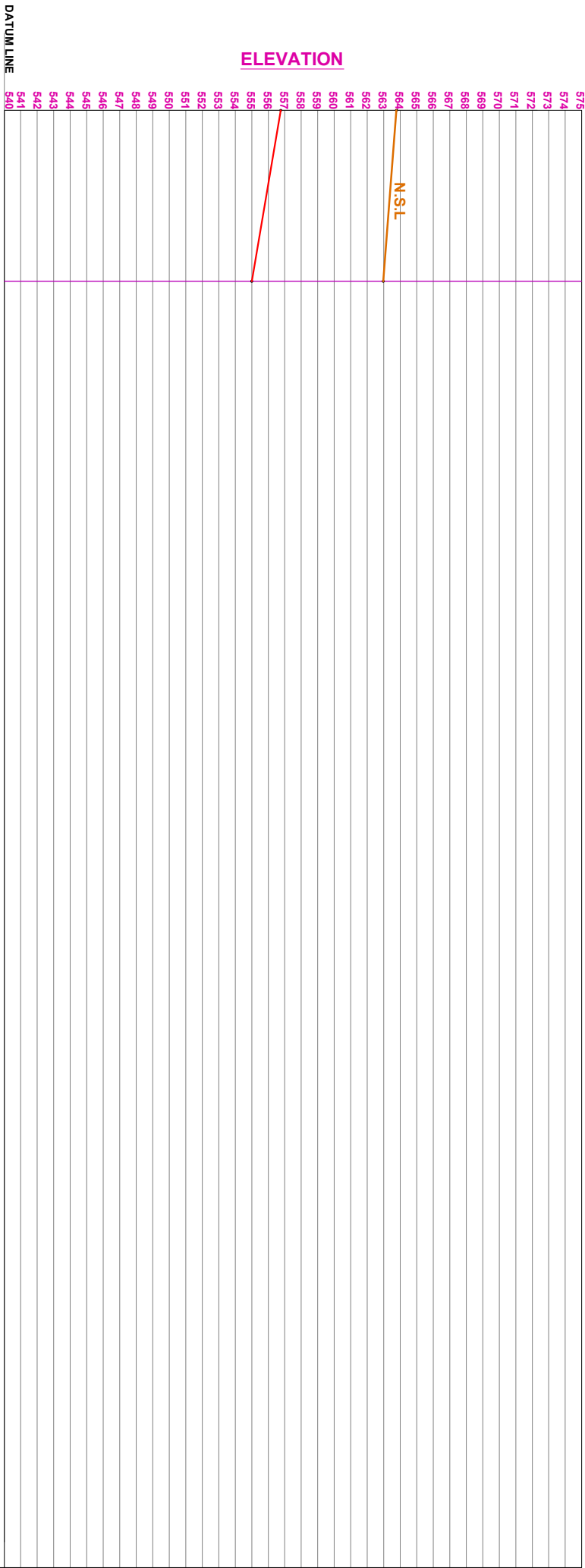
F3-F1



REDUCED DISTANCE	000'	943'
N.S.L.	566.90	565.77
INVERT LEVEL	558.90	556.76
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00227	
DIA OF PIPE	15"Ø	
REF. POINT	F-3	F-1

PROFILE OF MAIN SEWER GOJRA CITY.

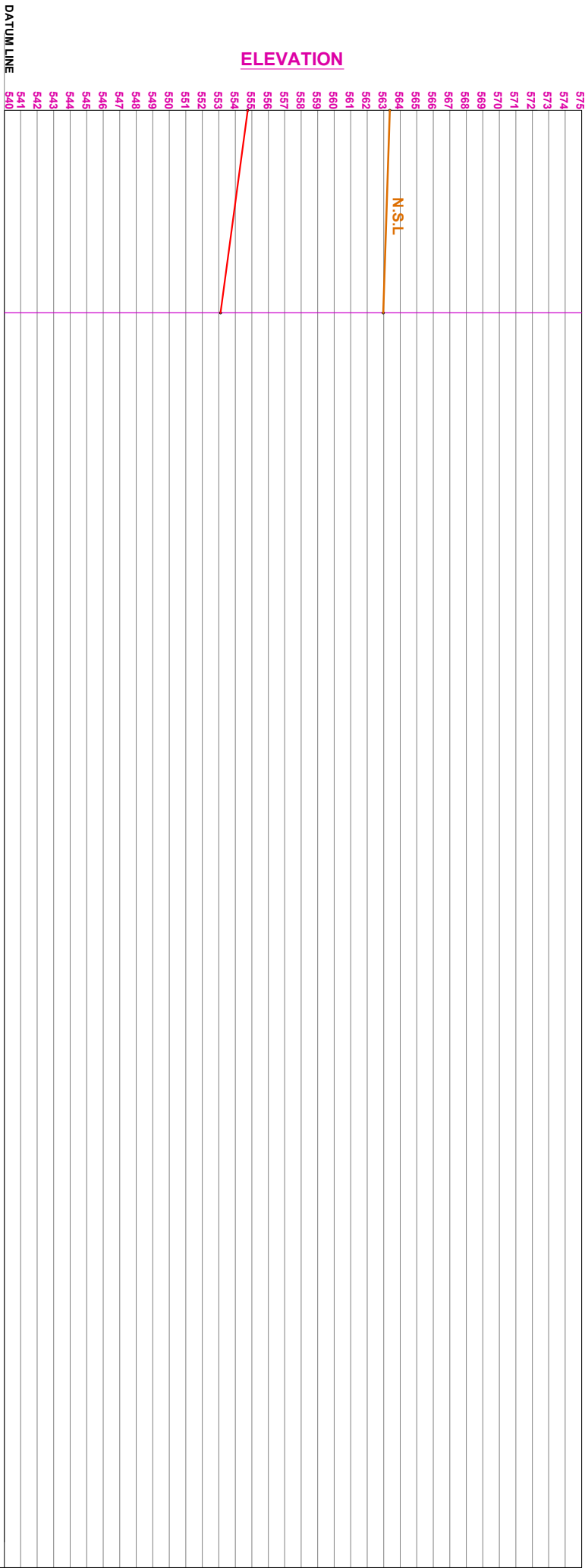
F5-F4



REDUCED DISTANCE	000'
N.S.L.	563.77
INVERT LEVEL	556.76
VELOCITY	2.5 Ft. / Sec.
SLOPE	0.00227
DIA OF PIPE	15"Ø
REF. POINT	F-5
	F-4

PROFILE OF MAIN SEWER GOJRA CITY.

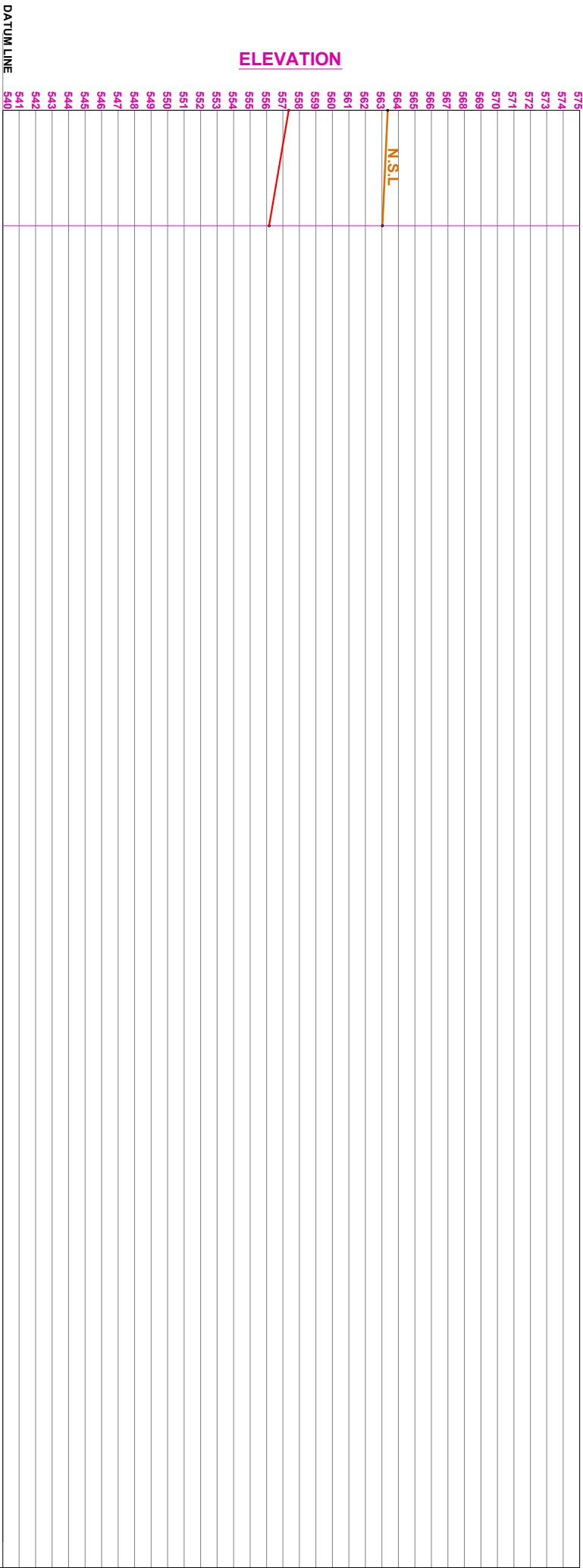
F4-F2



REDUCED DISTANCE	000'
N.S.L.	563.37
INVERT LEVEL	554.75
VELOCITY	2.5 Ft. / Sec.
SLOPE	0.00178
DIA OF PIPE	18"Ø
REF. POINT	F-4
	F-2

PROFILE OF MAIN SEWER GOJRA CITY.

G-6-G5

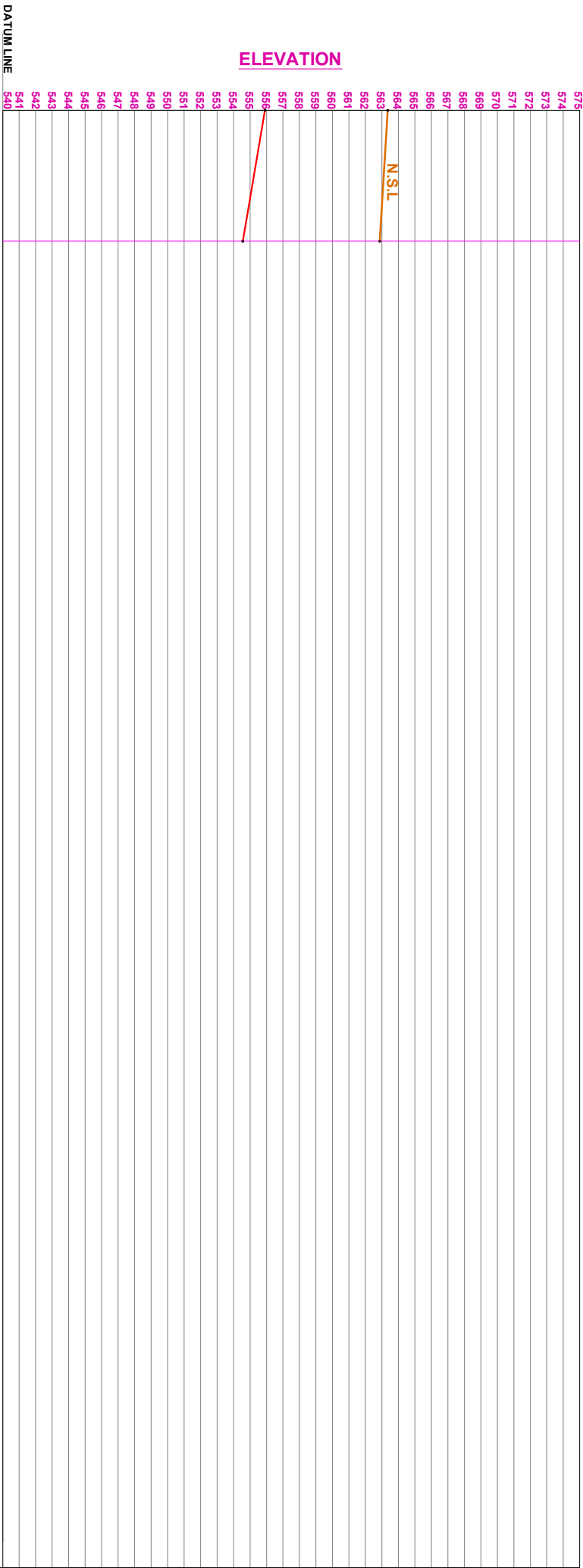


REDUCED DISTANCE	000'	525'
N.S.L.	563.35	563.03
INVERT LEVEL	557.35	556.16
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00227	
DIA OF PIPE	15"Ø	
REF. POINT	G-6	G-5



PROFILE OF MAIN SEWER GOJRA CITY.

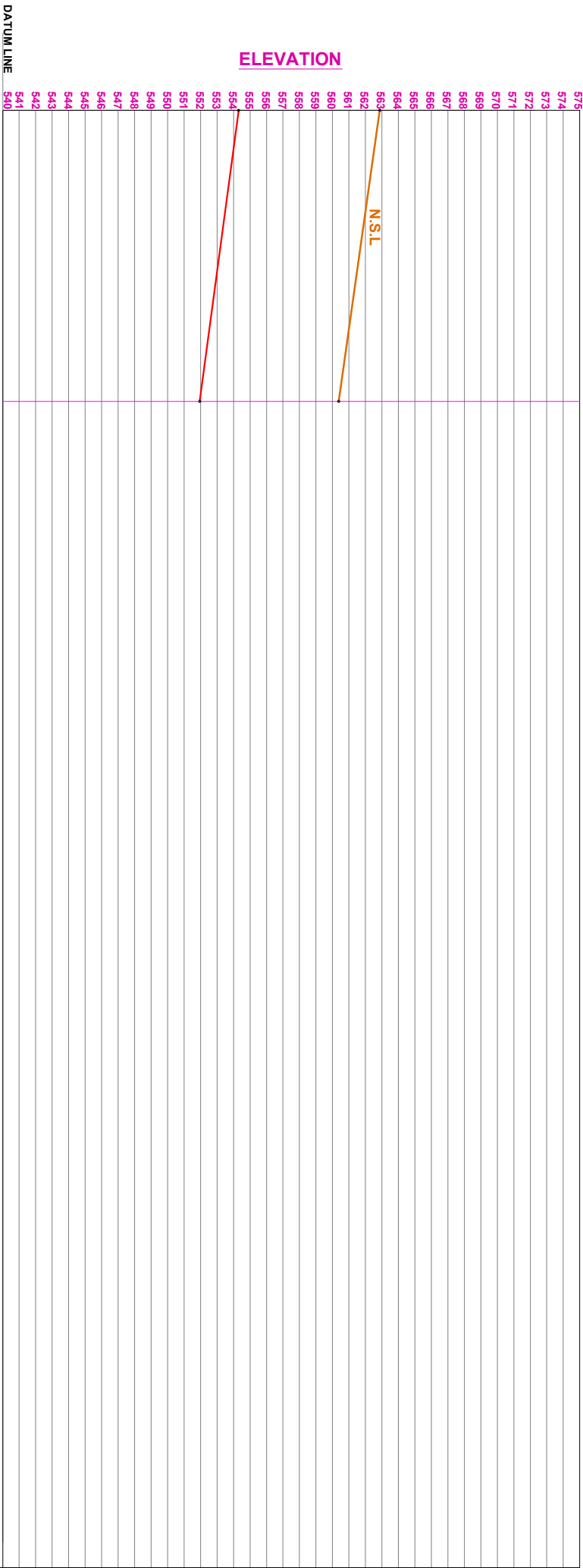
G5-G4



REDUCED DISTANCE	000'	595'
N.S.L.	563.35	562.87
INVERT LEVEL	555.91	554.56
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00227	
DIA OF PIPE	15"Ø	
REF. POINT	G-5	G-4

PROFILE OF MAIN SEWER GOJRA CITY.

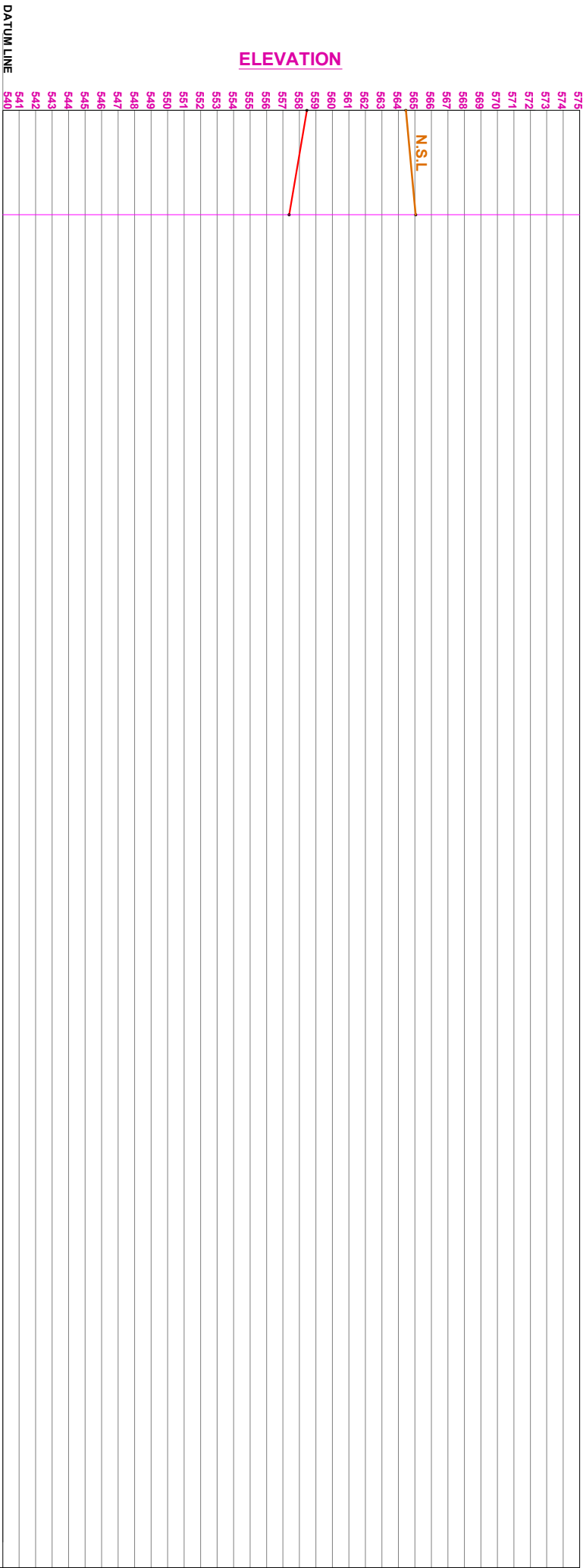
G4G



REDUCED DISTANCE	000'	1323'
N.S.L.	562.87	560.38
INVERT LEVEL	554.31	551.95
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00178	
DIA OF PIPE	18"Ø	
REF. POINT	G-4	G

PROFILE OF MAIN SEWER GOJRA CITY.

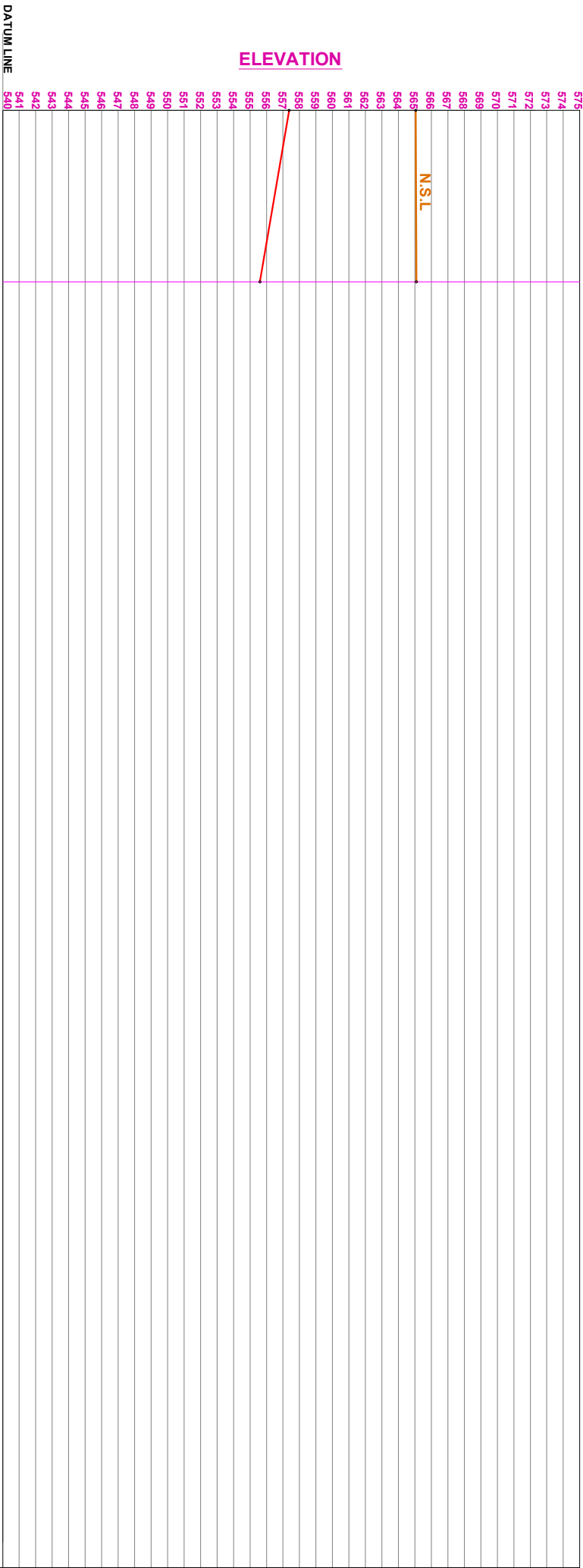
G3-G2



REDUCED DISTANCE	000'	475'
N.S.L.	564.45	565.05
INVERT LEVEL	558.45	557.37
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00227	
DIA OF PIPE	15"Ø	
REF. POINT	G-3	G-2

PROFILE OF MAIN SEWER GOJRA CITY.

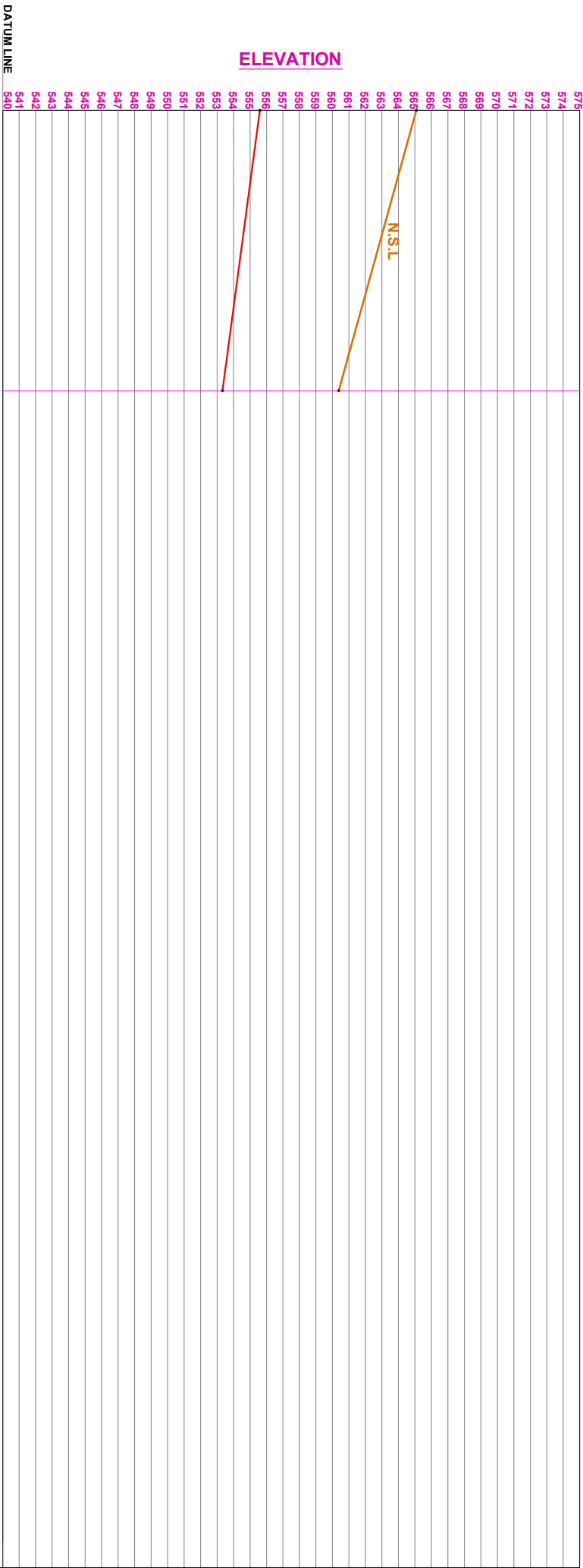
G2-G1



REDUCED DISTANCE	000'	475'
N.S.L.	565.05	565.09
INVERT LEVEL	557.37	555.60
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00227	
DIA OF PIPE	15"Ø	
REF. POINT	G-2	G-1

PROFILE OF MAIN SEWER GOJRA CITY.

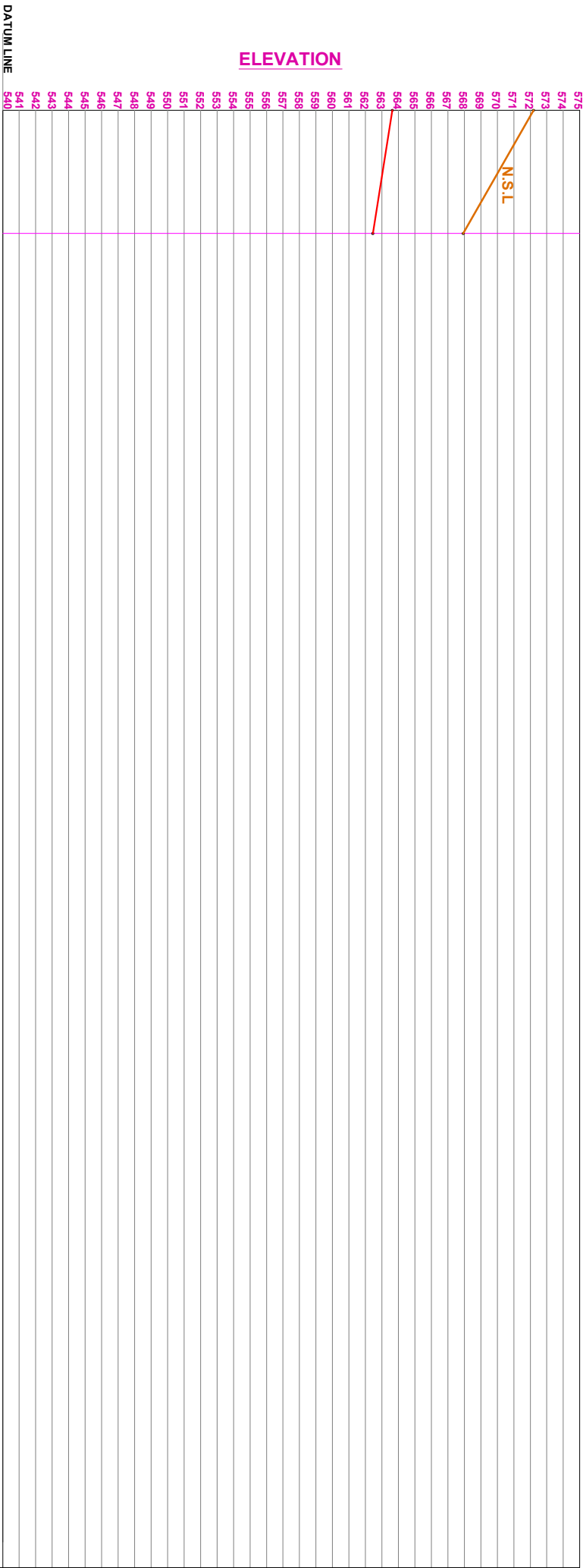
G1-G



REDUCED DISTANCE	000'	1275'
N.S.L.	565.09	560.38
INVERT LEVEL	555.60	553.33
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00178	
DIA OF PIPE	18"Ø	
REF. POINT	G-1	G

PROFILE OF MAIN SEWER GOJRA CITY.

A3-A2



REDUCED DISTANCE	000'	
N.S.L	572.20	567.93
INVERT LEVEL	563.63	562.45
VELOCITY	2.5 Ft. / Sec.	
SLOPE	0.00227	
DIA OF PIPE	15" Ø	
REF. POINT	A-3	A-2

Class	Dia of Bars		No. of Rings	Dia of Rings		Spacing of Rings	
	Inches	mm		Inches	mm	Inches	mm
II	3/16	4.76	20	16.88	429	4.64	118
III	3/16	4.76	22	16.88	429	4.00	102
IV	3/16	4.76	27	16.88	429	3.26	83

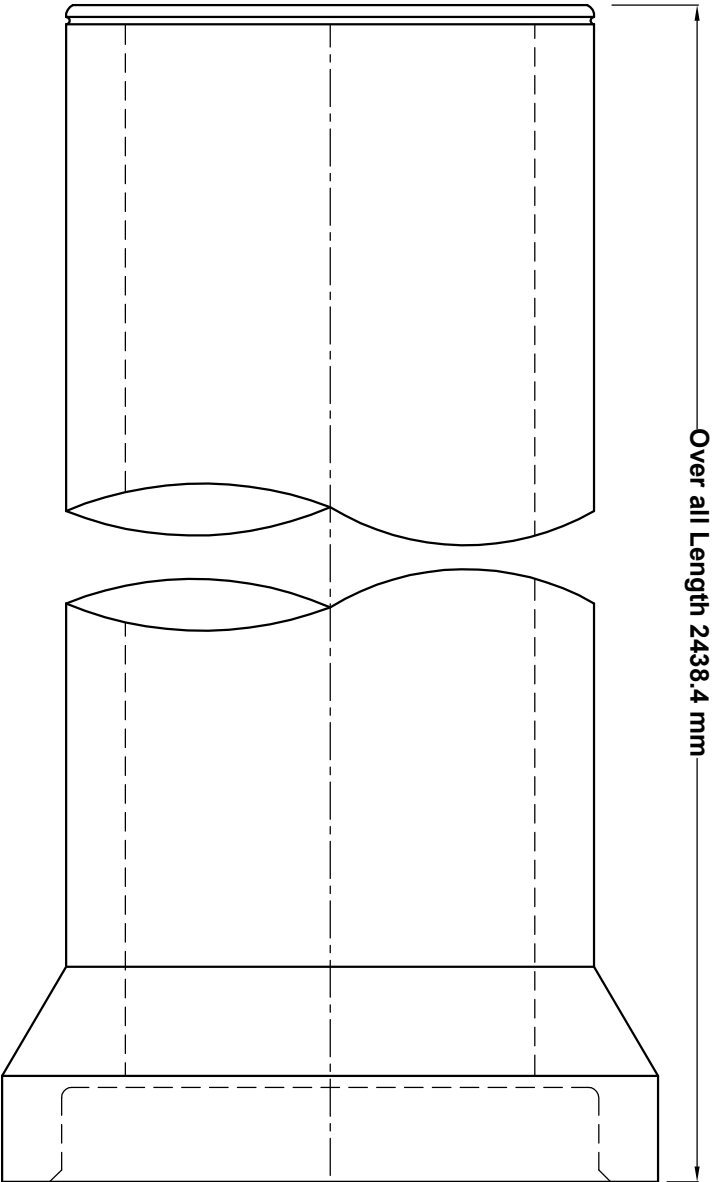
Class	Dia of Bars		No. of Rings	Dia of Rings		Spacing of Bars	
	Inches	mm		Inches	mm	Inches	mm
II	3/16	4.76	2	22.24	565	2.75	70
III	3/16	4.76	2	22.24	565	2.75	70
IV	3/16	4.76	2	22.24	565	2.75	70
	5/32	3.97	2	22.24	565	2.75	70

Strength Requirement / Ft Length					
Type of Pipe	Wall	Proof Load		Ultimate Load	
		Lbs	Tonne	Lbs	Tonne
Class II	B	1250	0.57	1825	0.83
Class III	B	1688	0.77	2000	1.13
Class IV	B	2500	1.13	3750	1.70

Longitudinal Reinforcement Class II-IV			
Dia of Bars	Inches	mm	No. of Bars
3/16	4.76		4
Bars to be Equally Spaced Around 360°			

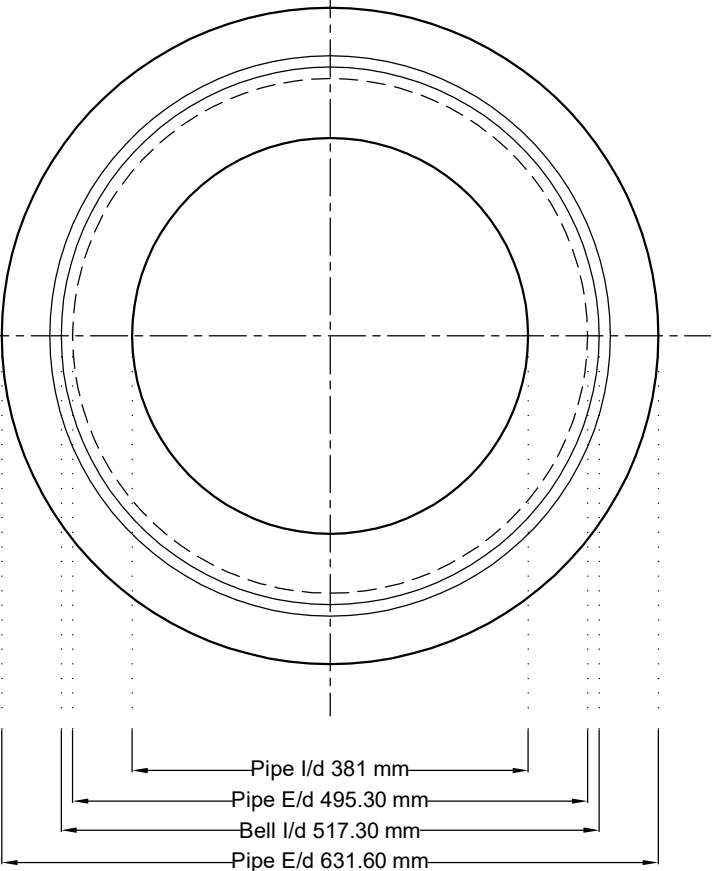
Size (Thickness)		Internal Dia	
Inches	mm	Inches	mm
9/16	14.3	18.42	468

WALL THICKNESS OF PIPE	
Inches	mm
2.25	57



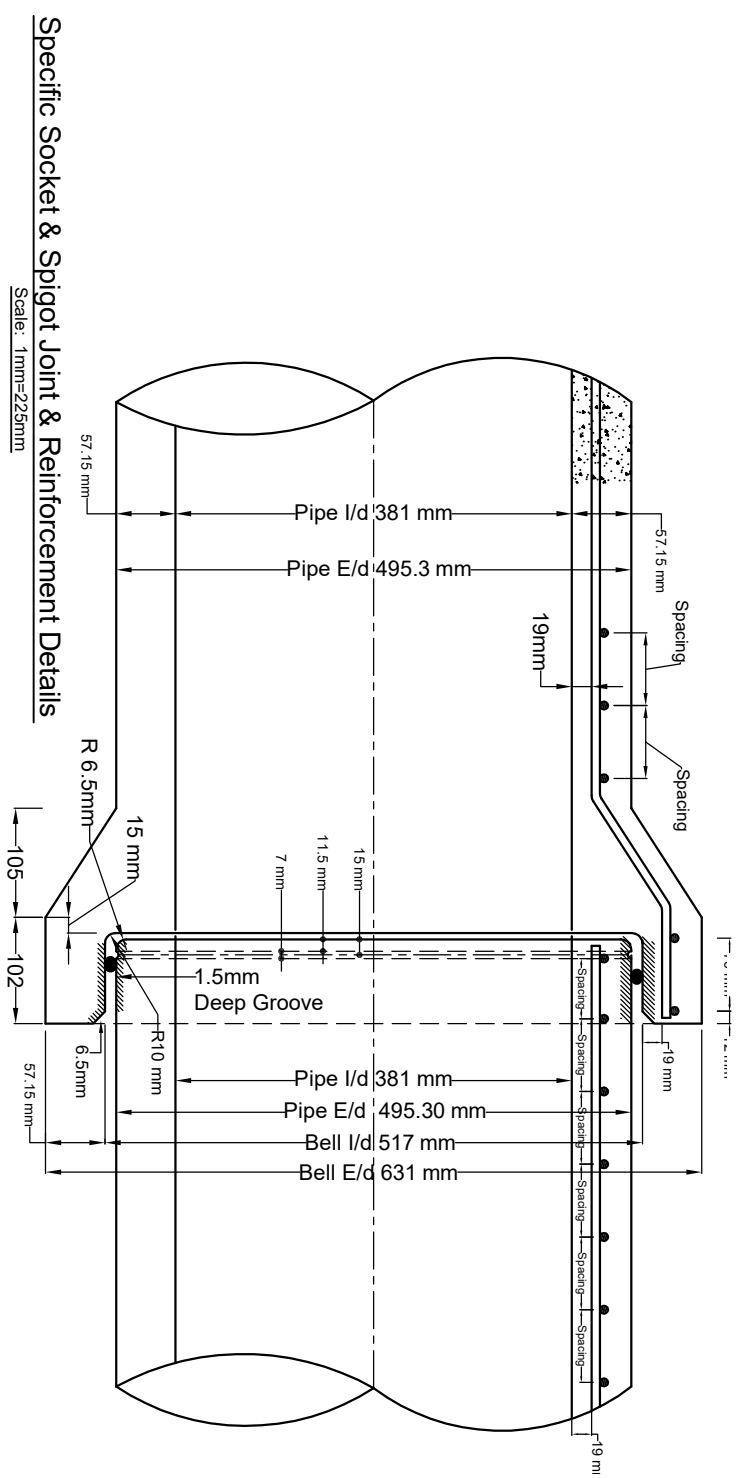
RCC PIPE LONGITUDINAL VIEW

Scale: 1mm=225mm



CIRCULAR VIEW OF PIPE

Scale: 1mm=225



Specific Socket & Spigot Joint & Reinforcement Details

Scale: 1mm=225mm

- NOTE:**
- TOLERANCE**
    - Other than these faces marked |||| all tolerances are ASTM C 76
    - Faces marked |||| ± 1 mm on diameter
  - 381 mm (15") I/d Pipe will not be allowed to be laid beyond depth as identified in WASA design criteria hand book.
  - 381 mm (15") Internal Dia RCC Pipe, Class II III IV ASTM C 76-88

**TITLE:**  
Standard Drawing of RCC Sewer Pipe,  
Joint & Reinforcement Detail (15"Ø)

Class	Dia of Bars		No. of Rings	Dia of Rings		Spacing of Rings	
	Inches	mm		Inches	mm	Inches	mm
II	3/16	4.76	19	20.35	517	4.62	118
III	3/16	4.76	22	20.35	517	4.25	108
IV	3/16	4.76	39	20.35	517	2.24	57
	1/4	6.35	21	20.35	517	4.17	106

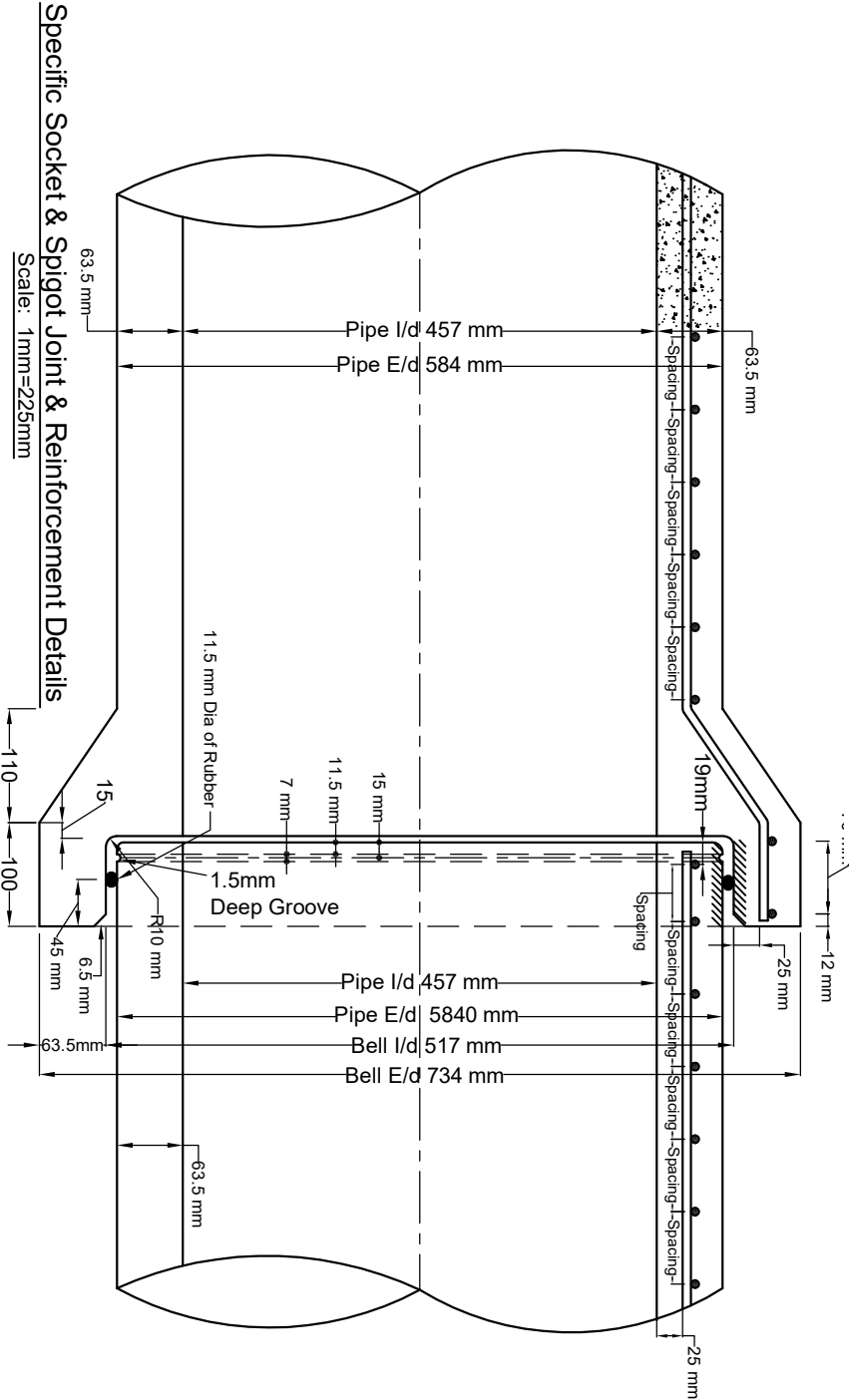
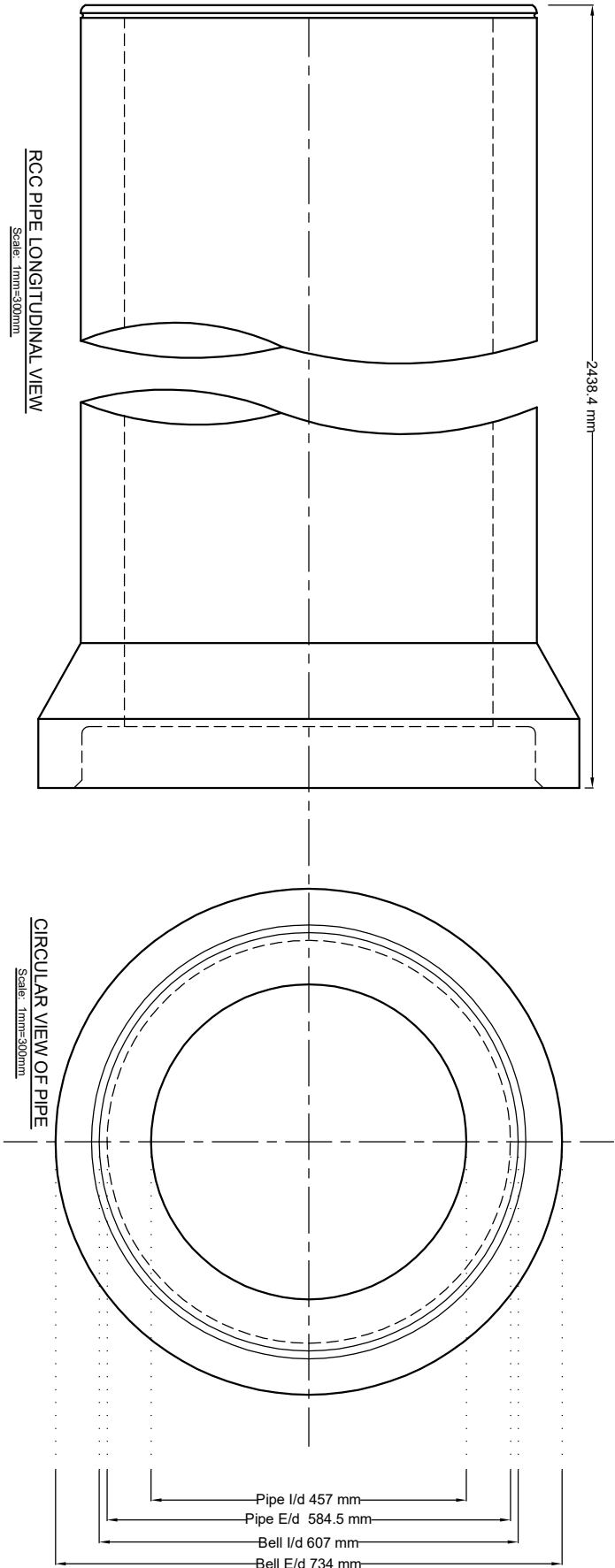
Class	Dia of Bars		No. of Rings	Dia of Rings		Spacing of Rings	
	Inches	mm		Inches	mm	Inches	mm
II	3/16	4.76	2	26.25	667	2.75	70
III	3/16	4.76	2	26.25	667	2.75	70
IV	3/16	4.76	2	26.25	667	2.75	70
	1/4	6.35	2	26.25	667	2.75	70

Strength Requirement / Ft Length				
Type of Pipe	Wall	Proof Load		Ultimate Load
Class II	B	1499	0.68	2250
Class III	B	2025	0.92	3000
Class IV	B	3000	1.36	4500

Longitudinal Reinforcement Class II-IV		
Dia of Bars		No. of Bars
Inches	mm	
3/16	4.76	4
Bars to be Equally Spaced Around 360°		

Size (Thickness)		Internal Dia	
Inches	mm	Inches	mm
9/16	14.3	21.73	552

WALL THICKNESS OF PIPE	
Inches	mm
2.5	64



NOTE:

- TOLERANCE
  - Other than these faces marked |||| all tolerances are ASTM C 76
  - Faces marked |||| + 1 mm on diameter
- 457 mm (18") I/d Pipe will not be allowed to be laid beyond depth as identified in WASA design criteria hand book.
- 457 mm (18") Internal Dia RCC Pipe, Class II, III & IV, ASTM C 76-88

TITLE:  
Standard Drawing of RCC Sewer Pipe,  
Joint & Reinforcement Detail (18"Ø)



REINFORCEMENT FOR BARREL

Class	Dia of Bars		No. of Rings	Dia of Rings		Spacing of Rings	
	Inches	mm		Inches	mm	Inches	mm
II	3/16	4.76	19	23.74	603	4.56	116
III	3/16	4.76	22	23.74	603	4.25	108
IV	3/8	9.52	13	23.74	603	6.69	170
	1/4	6.35	31	23.74	603	2.80	71.23

REINFORCEMENT FOR BELL

Class	Dia of Bars		No. of Rings	Dia of Rings		Spacing of Rings	
	Inches	mm		Inches	mm	Inches	mm
II	3/16	4.76	2	30.15	766	2.75	70
III	3/16	4.76	2	30.15	766	2.75	70
IV	3/8	9.52	2	30.15	766	2.75	70
	1/4	6.35	2	30.15	766	2.75	70

CONCRETE STRENGTH 4000 psi = 281 Kg / cm<sup>2</sup>

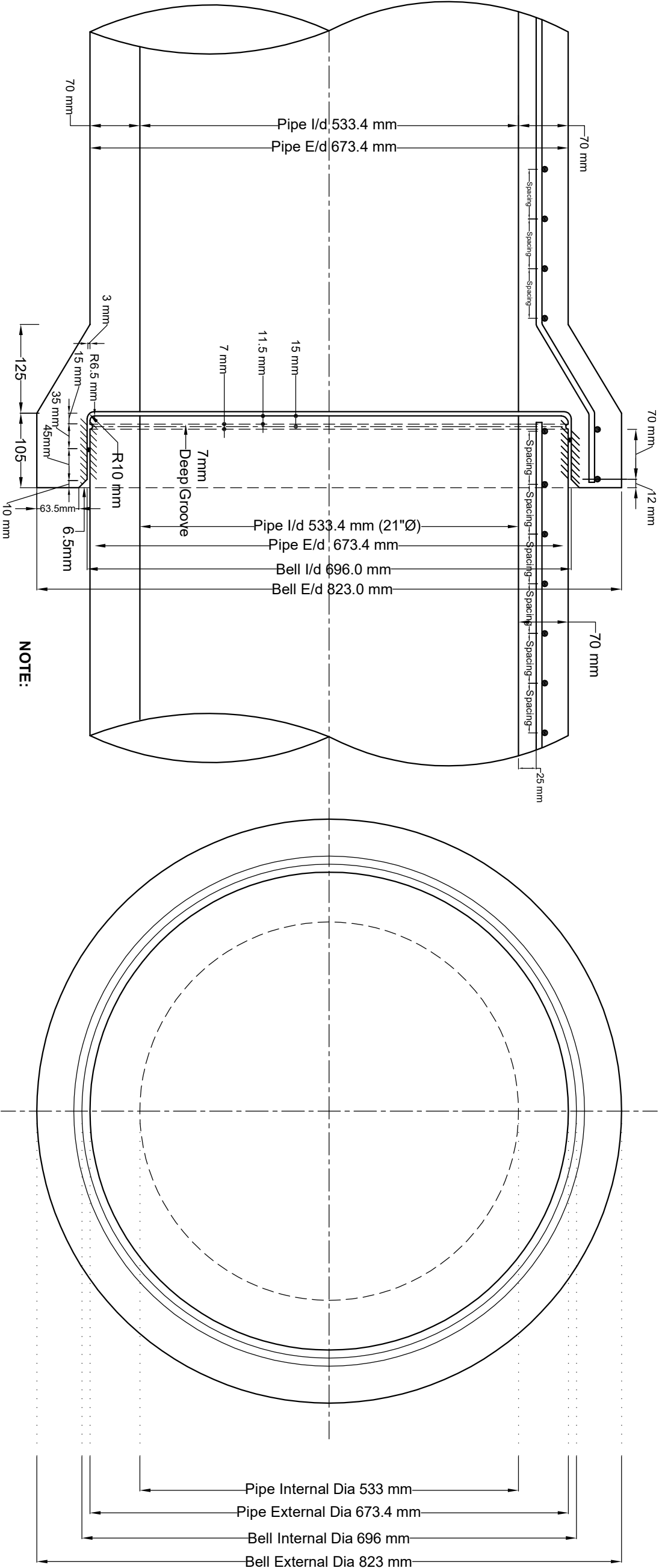
Strength Requirement / Ft Length					
Type of Pipe	Wall	Proof Load		Ultimate Load	
		Lbs	Tonne	Lbs	Tonne
Class II	B	1750	0.79	2625	1.19
Class III	B	2363	1.07	3500	1.51
Class IV	B	3500	1.58	5250	2.36

Longitudinal Reinforcement Class II-IV			
Dia of Bars	Inches	mm	No. of Bars
3/16	4.76		4
Bars to be Equally Spaced Around 360°			

RUBBER RING

Size (Thickness)		Internal Dia	
Inches	mm	Inches	mm
9/16	14.3	25.07	637

WALL THICKNESS OF PIPE	
Inches	mm
2.75	70



Specific Socket & Spigot Joint & Reinforcement Details

Scale: 1mm=200mm

- TOLERANCE
  - Other than these faces marked  $\text{||||}$  all tolerances are ASTM C 76
  - Faces marked  $\text{||||}$   $\pm$  1 mm on diameter
- 534mm (21") I/d Pipe will not be allowed to be laid beyond depth as identified in WASA design criteria hand book.
- 534mm (21") Internal Dia RCC Pipe, Class II, III & IV, ASTM C 76-88

CIRCULAR VIEW OF PIPE

Scale: 1mm=200mm

**TITLE:**  
Standard Drawing of RCC Sewer Pipe,  
Joint & Reinforcement Detail (21"Ø)

REINFORCEMENT FOR BARREL

Class	Dia of Bars		Spacing		No. of Rings	Dia of Rings	
	Inches	mm	Inches	mm		Inches	mm
II	3/16	4.76	2.65	65	35	29.76	756
	1/4	6.35	3.70	94	24	29.76	756
III	3/16	4.76	2.08	53	43	29.76	756
	1/4	6.35	1.88	48	47	29.76	756
IV	3/8	9.52	4.25	108	21	29.76	756

REINFORCEMENT FOR SOCKET

Class	Dia of Bars		Spacing		No. of Rings	Dia of Rings + 6mm	
	Inches	mm	Inches	mm		Inches	mm
II	3/16	4.76	1.02	26	3	32.20	818
	1/4	6.35	1.02	26	3	32.04	814
III	3/16	4.76	1.02	26	3	32.20	818
	1/4	6.35	1.02	26	3	32.04	814
IV	3/8	9.52	1.02	26	3	31.81	808

REINFORCEMENT FOR SPIGOT

Class	Dia of Bars		Spacing		No. of Rings	Dia of Rings + 6mm	
	Inches	mm	Inches	mm		Inches	mm
II	3/16	4.76	1.02	26	3	28.34	720
	1/4	6.35	1.02	26	3	28.36	720
III	3/16	3.76	1.02	26	3	28.34	720
	1/4	6.35	1.02	26	3	28.34	720
IV	3/8	9.52	1.02	26	3	28.34	720

Longitudinal Reinforcement Class II-IV			
Dia of Bar		No. of Bars	
Inches	mm		
1/4	6.35	8	
3/16	4.76	12	
Bars to be Equally Spaced Around 360°			

Strength Requirement / Ft Length				
Type of Pipe	Wall	Proof Load		Ultimate Load
		Lbs	Tonne	
Class II	B	2250	1.02	3375
Class III	B	3038	1.37	4500
Class IV	B	4500	2.04	6750

WALL THICKNESS OF PIPE	
Inches	mm
3.25	82.5

CONCRETE STRENGTH 4000 psi = 281 Kg / cm <sup>2</sup>

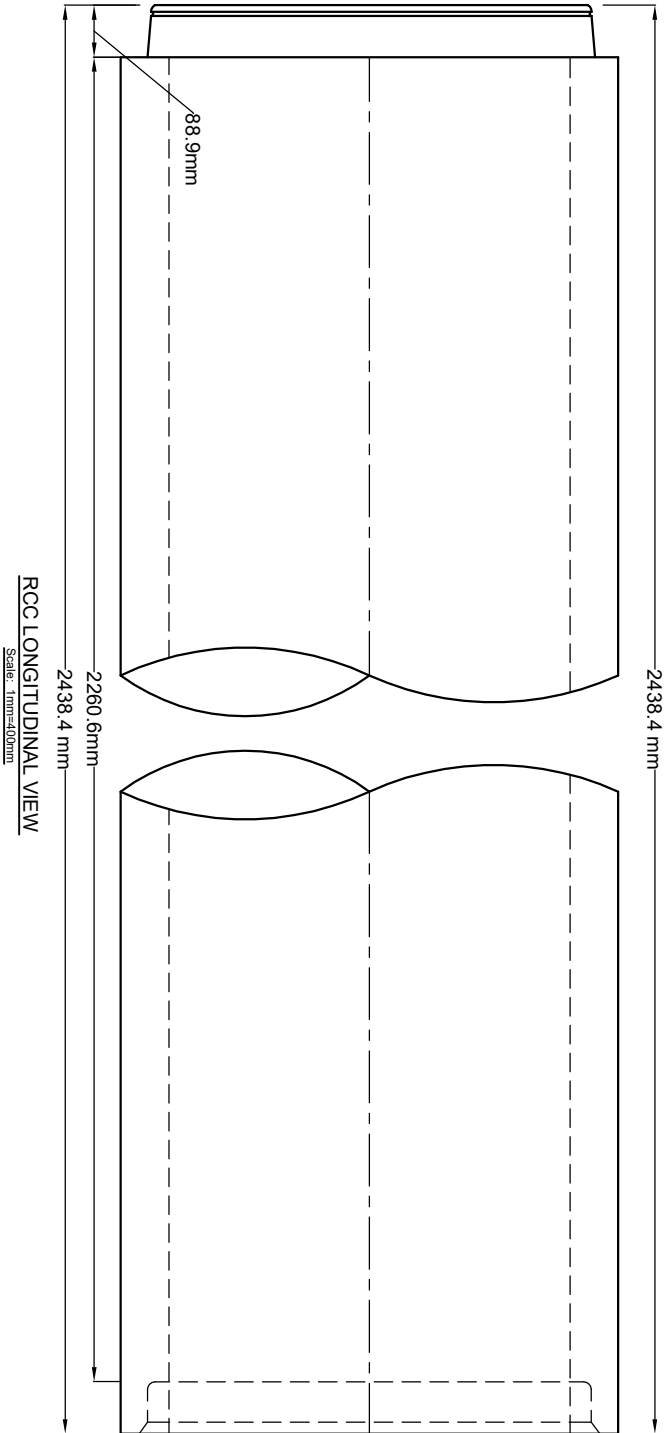
Strength Requirement / Ft Length				
Type of Pipe	Wall	Proof Load		Ultimate Load
		Lbs	Tonne	
Class II	B	2250	1.02	3375
Class III	B	3038	1.37	4500
Class IV	B	4500	2.04	6750

RUBBER RING

Rubber Ring	Size (Thickness)		Internal Dia	
	Inches	mm	Inches	mm
For 27"Ø Pipe	9/16	14.3	28.08	713

NOTE:

1. TOLERANCE
- (a) Other than these faces marked |||| all tolerances are ASTM C 76
- (b) Faces marked |||| + 1 mm on diameter
2. 686mm (27") I/d Pipe will not be allowed to be laid beyond depth as identified in WASA design criteria hand book.
3. 686mm (27") Internal Dia RCC Pipe, Class II, III & IV, ASTM C 76-88

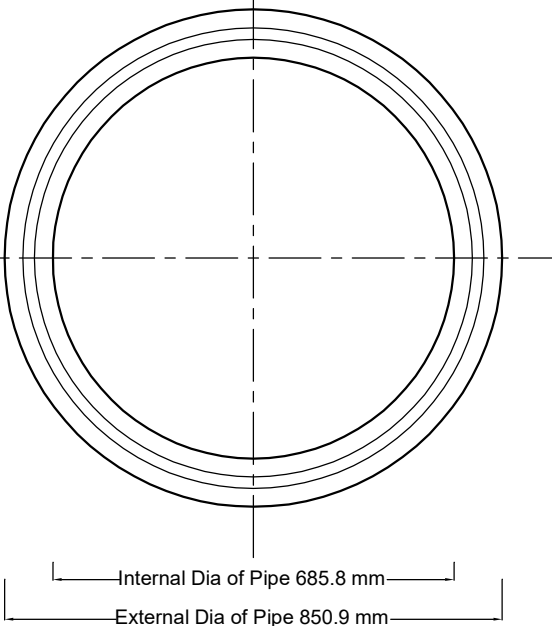


RCC LONGITUDINAL VIEW

Scale: 1mm=400mm

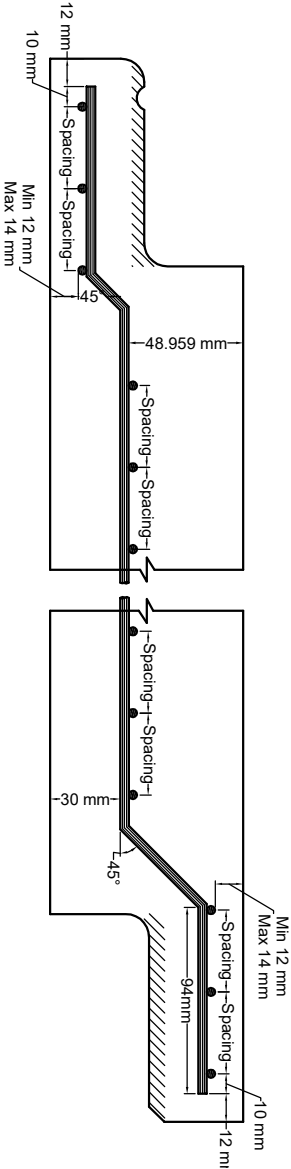
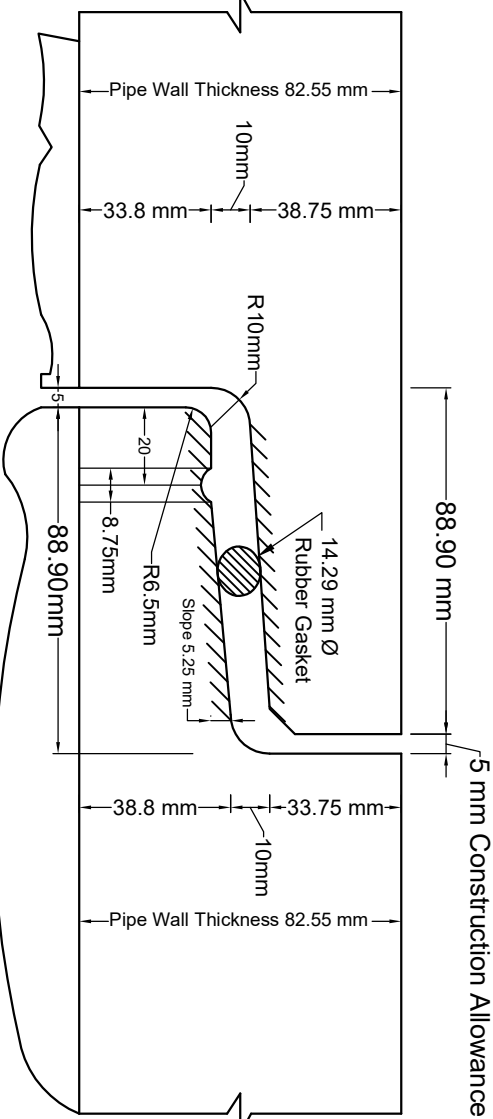
CIRCULAR VIEW OF PIPE

Scale: 1mm=400mm



Specific Walls & Joint Construction Detail

Scale: 1mm=60mm



Reinforcement Arrangements

Scale: 1mm=100mm

TITLE:

Standard Drawing of RCC Sewer Pipe,  
Joint & Reinforcement Detail (27"Ø)

REINFORCEMENT FOR BARREL				
Class	Dia of Bars		Spacing	No. of Rings
	Inches	mm	Inches	mm
II	3/16	4.76	2.34	59
	1/4	6.35	4.36	110
III	3/16	4.76	1.81	46
	1/4	6.35	3.40	87
IV	1/4	6.35	1.69	43
	3/8	9.53	9.60	244
				11
				32.83
				835

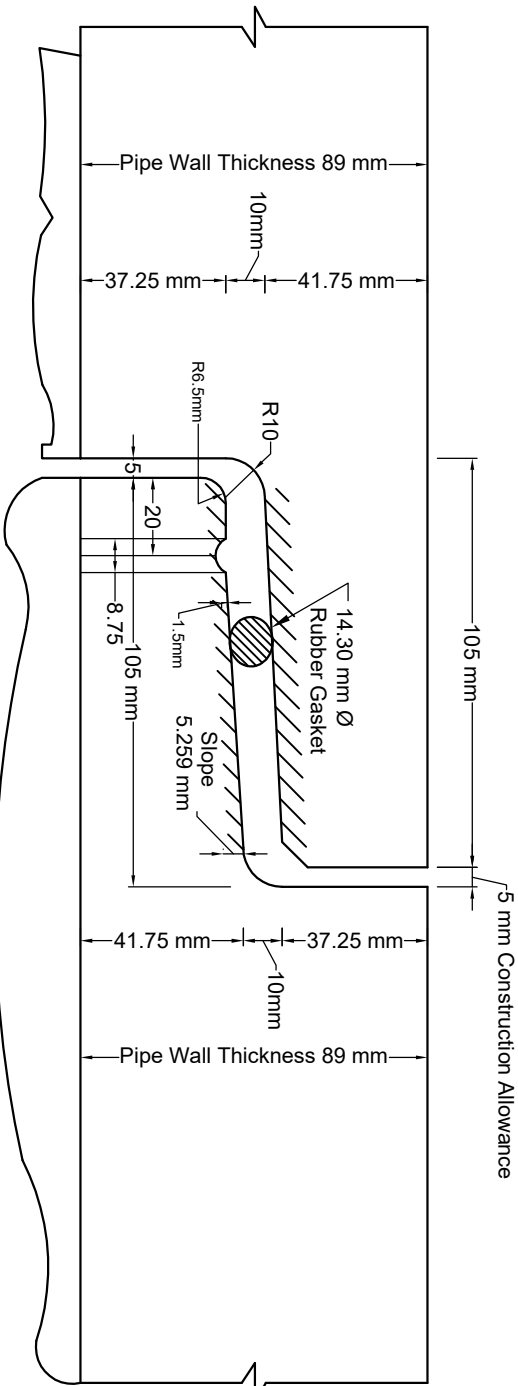
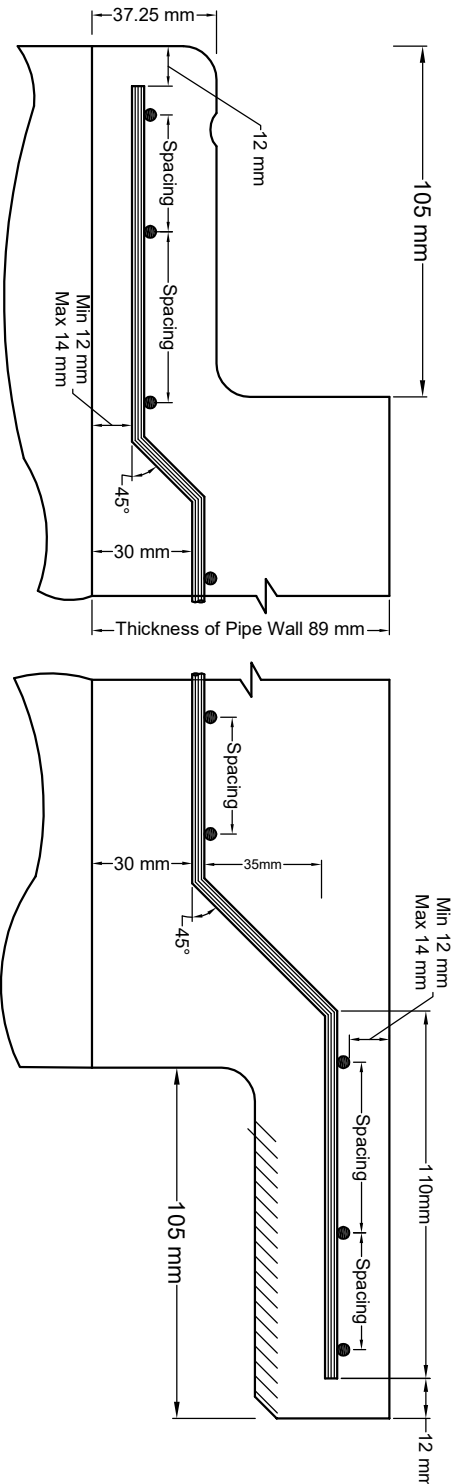
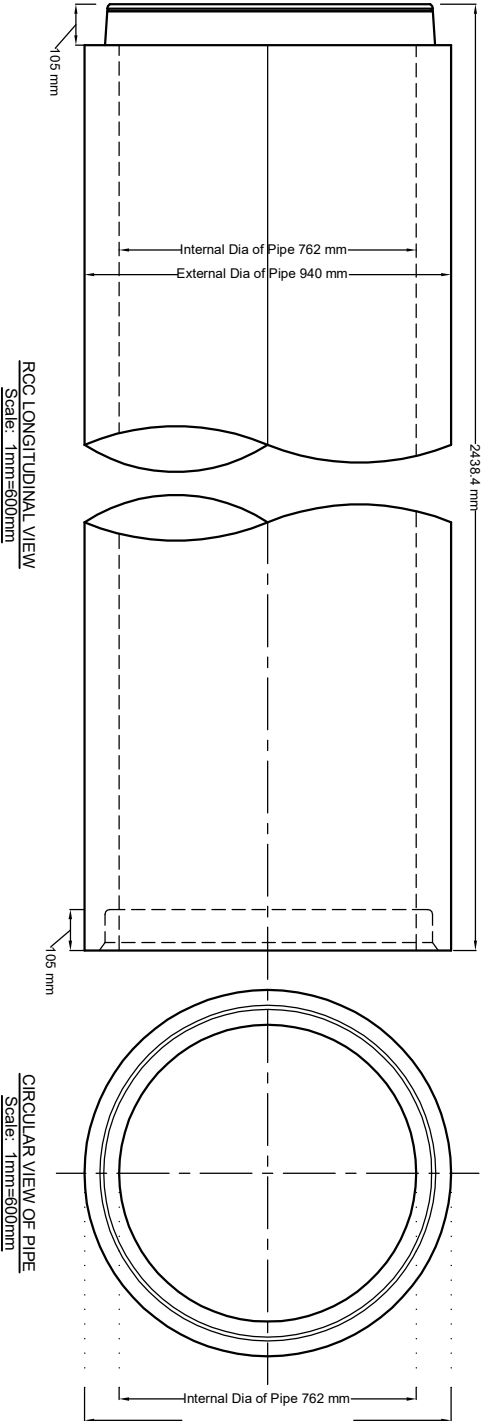
REINFORCEMENT FOR SOCKET				
Class	Dia of Bars		Spacing	No. of Rings
	Inches	mm	Inches	mm
II	3/16	4.76	1.38	35
	1/4	6.35	1.38	35
III	3/16	4.76	1.38	35
	1/4	6.35	1.38	35
IV	1/4	6.35	1.38	35
	3/8	9.53	1.38	35
				3
				36.41
				904

REINFORCEMENT FOR SPIGOT				
Class	Dia of Bars		Spacing	No. of Rings
	Inches	mm	Inches	mm
II	3/16	4.76	1.38	35
	1/4	6.35	1.38	35
III	3/16	4.76	1.38	35
	1/4	6.35	1.38	35
IV	1/4	6.35	1.38	35
	3/8	9.53	1.38	35
				3
				31.42
				799

Longitudinal Reinforcement Class II - IV		
Dia of Bar	No. of Bars	
Inches	mm	
3/16	4.76	12
1/4	6.35	8
Bars to be Equally Spaced Around 360°		

Strength Requirement / Ft Length				
Type of Pipe	Wall	Proof Load	Ultimate Load	
		Lbs	Tonne	Lbs
Class II	B	2500	1,134	3750
Class III	B	3375	1,531	5000
Class IV	B	5000	2,268	7500

RUBBER RING		Size (Thickness)		Internal Dia	
Rubber Ring	For 30"Ø Pipe	Inches	mm	Inches	mm (-5%)
		9/16	14.33	31.29	795
WALL THICKNESS OF PIPE		Inches	mm		
		3.5	89		

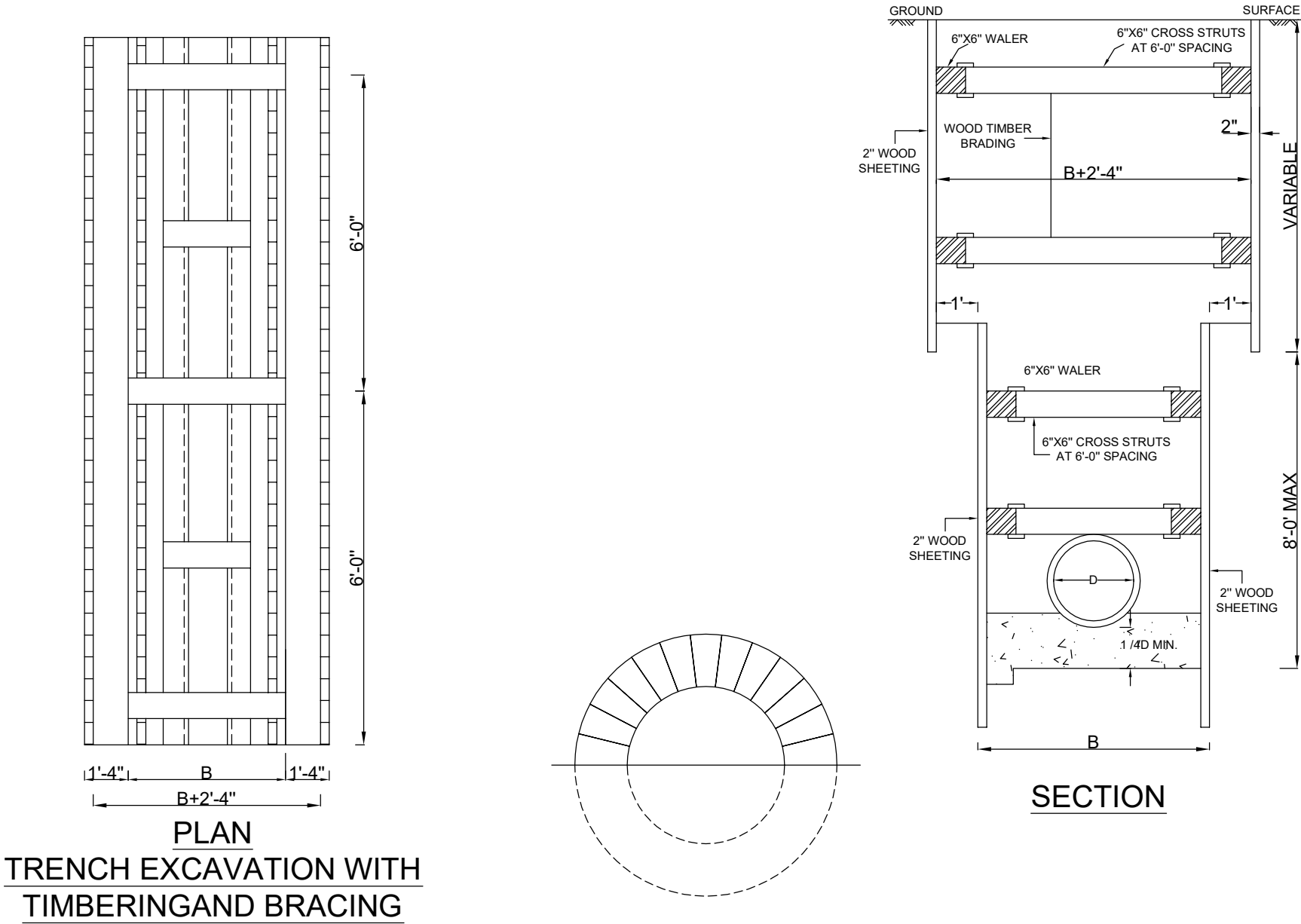


- NOTE:**
- TOLERANCE**
    - Other than these faces marked //// all tolerances are ASTM C 76
    - Faces marked //// + 1 mm on diameter
  - 762mm (30") I/d Pipe will not be allowed to be laid beyond depth as identified in WASA design criteria hand book. -
  - 762mm (30") Internal Dia RCC Pipe, Class II, III & IV, ASTM C 76-88

**TITLE:**

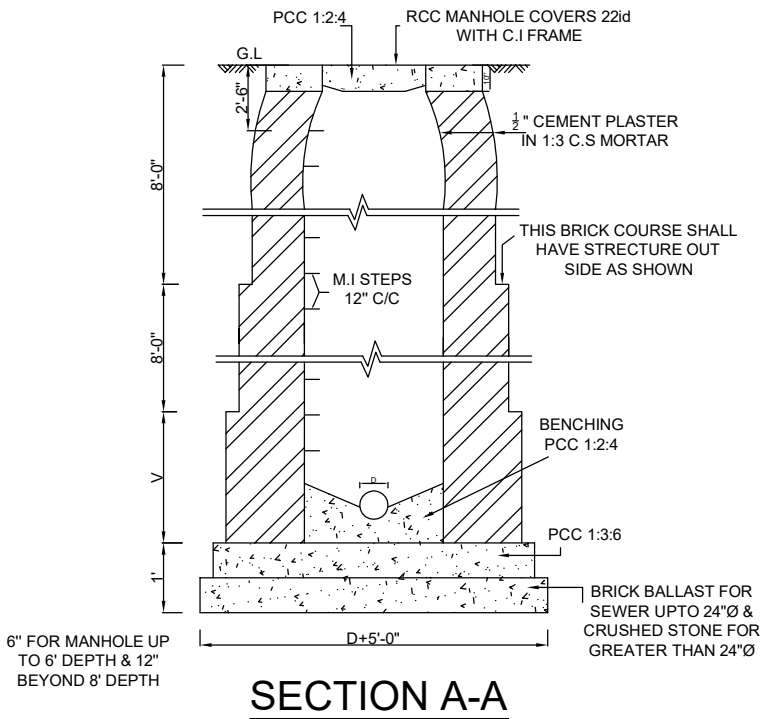
Standard Drawing of RCC Sewer Pipe,  
Joint & Reinforcement Detail (30"Ø)





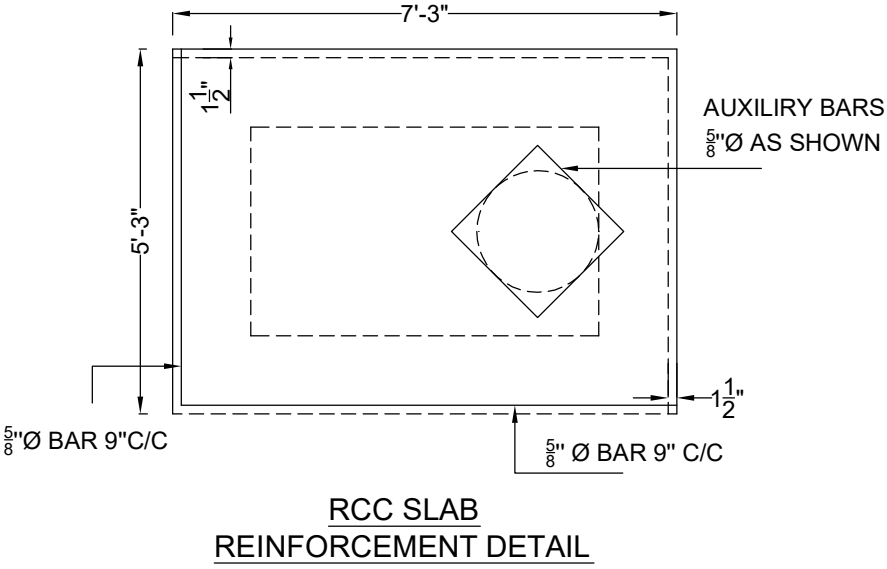
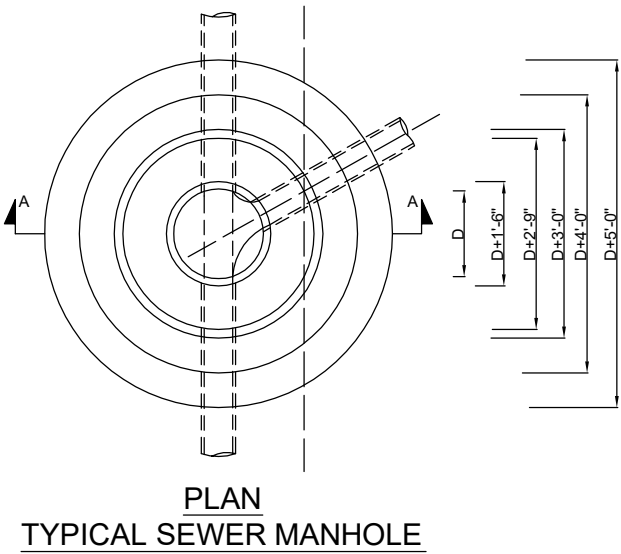
PLAN  
TRENCH EXCAVATION WITH  
TIMBERINGAND BRACING

ARCHING IN MANHOLE FOR PIPE

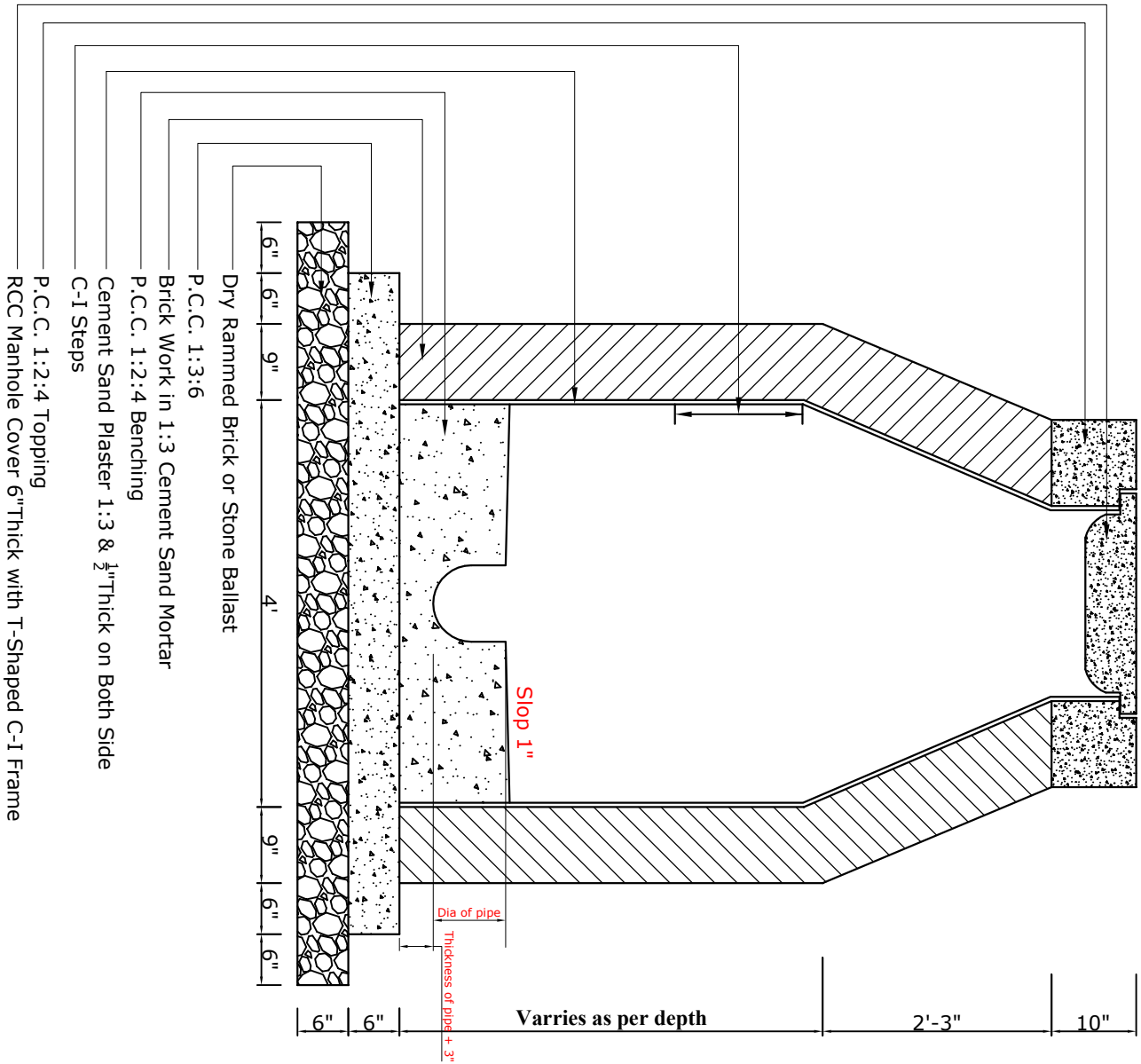


VARIABLE DIMENSIONS  
FOR SEWER MANHOLE

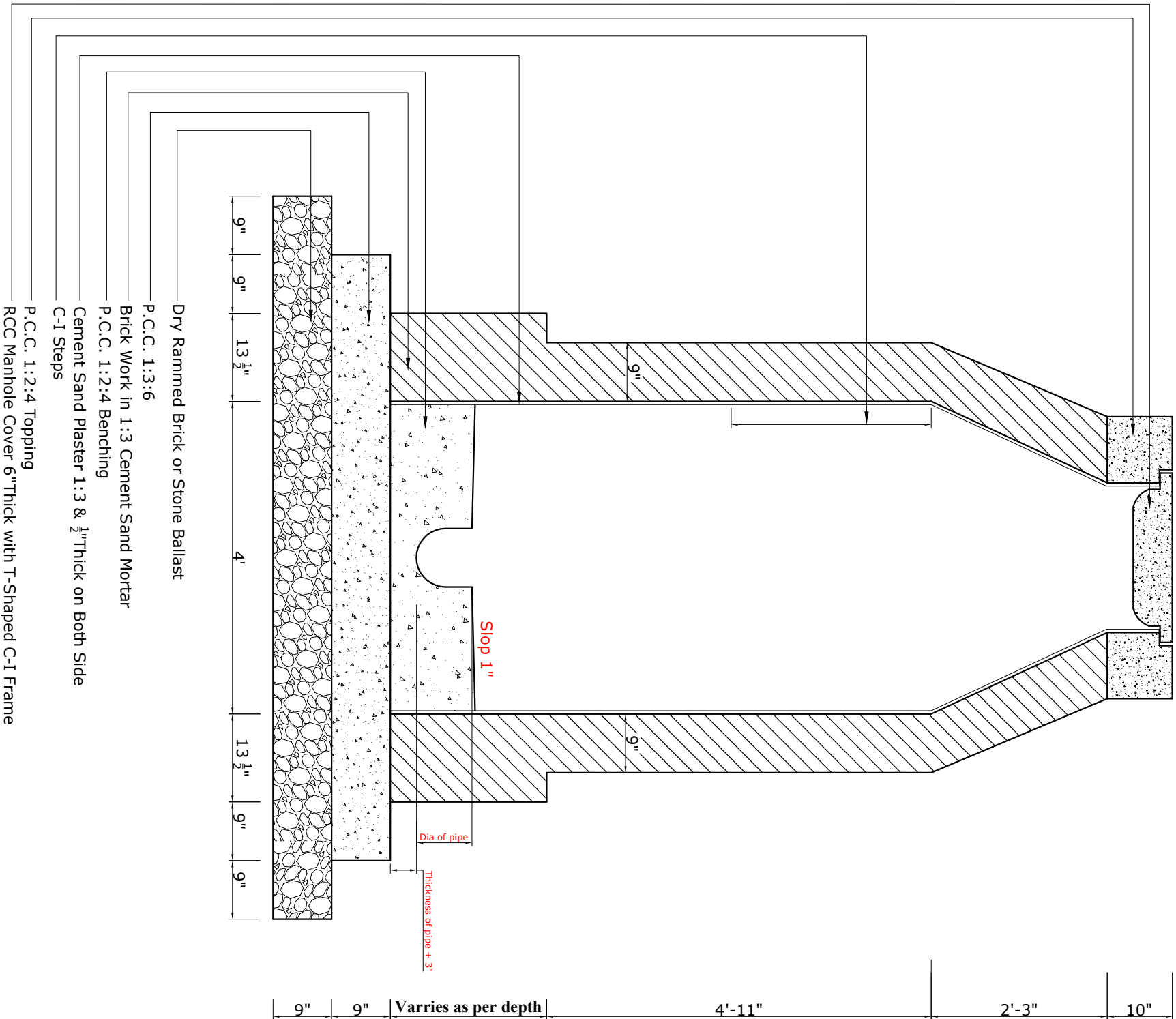
PIPE DIAMETER	D	H
9" TO 15"	4' - 0"	3' - 0"
18" TO 30"	5' - 0"	4' - 0"
36" TO 42"	6' - 0"	4' - 6"
48" TO 54"	7' - 6"	5' - 0"
60"	8' - 0"	5' - 6"
66"	8' - 8"	6' - 0"
72"	9' - 0"	6' - 6"
78"	9' - 6"	7' - 0"
84"	10' - 0"	7' - 6"
90"	10' - 8"	8' - 0"
96"	11' - 0"	8' - 6"



Typical X-Section of Manhole for up to Depth 8Ft.  
( FOR 9" TO 15" DIA )

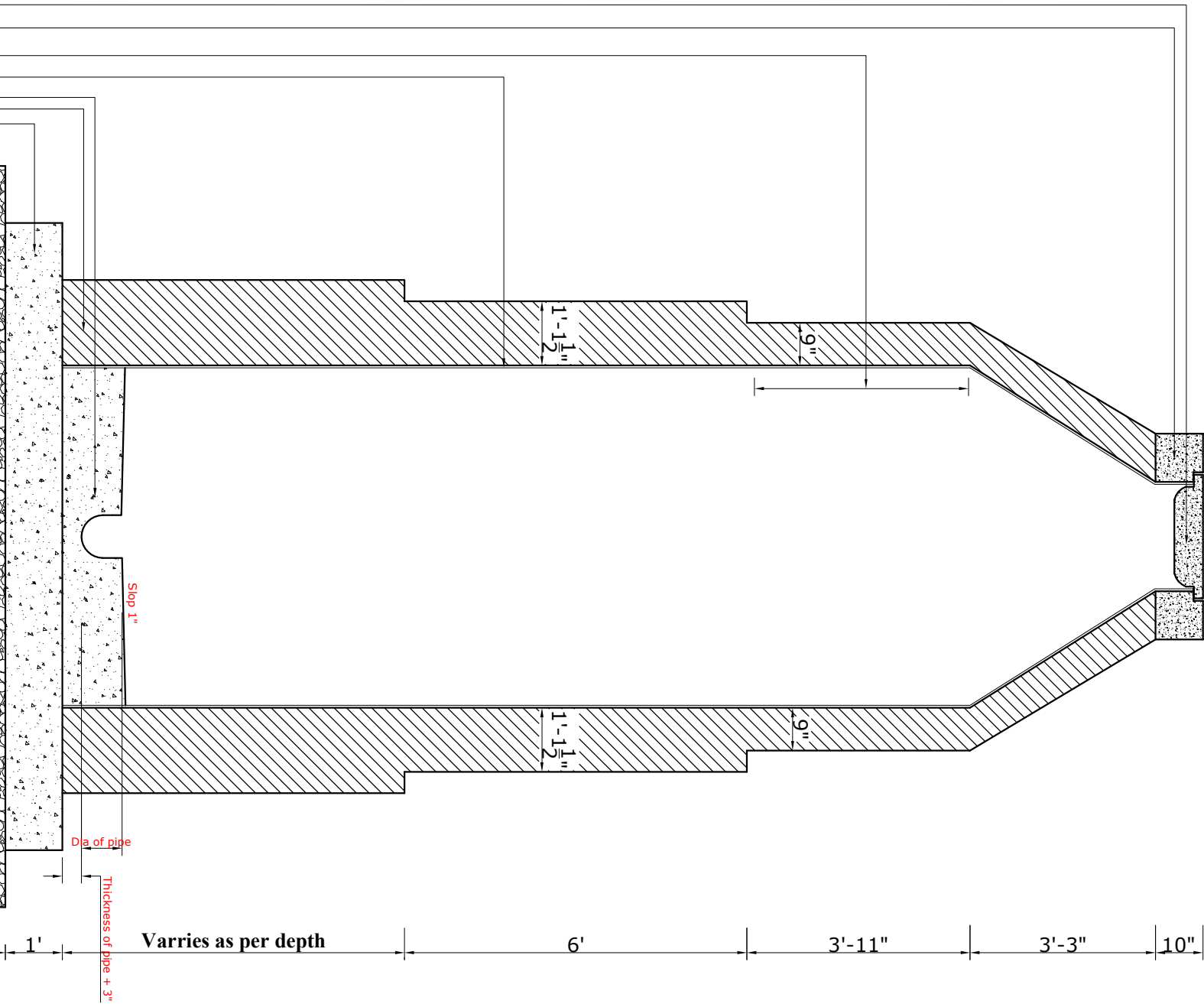


Typical X-Section of Manhole for Up to 14Ft Depth.  
( FOR 9" TO 15" DIA )



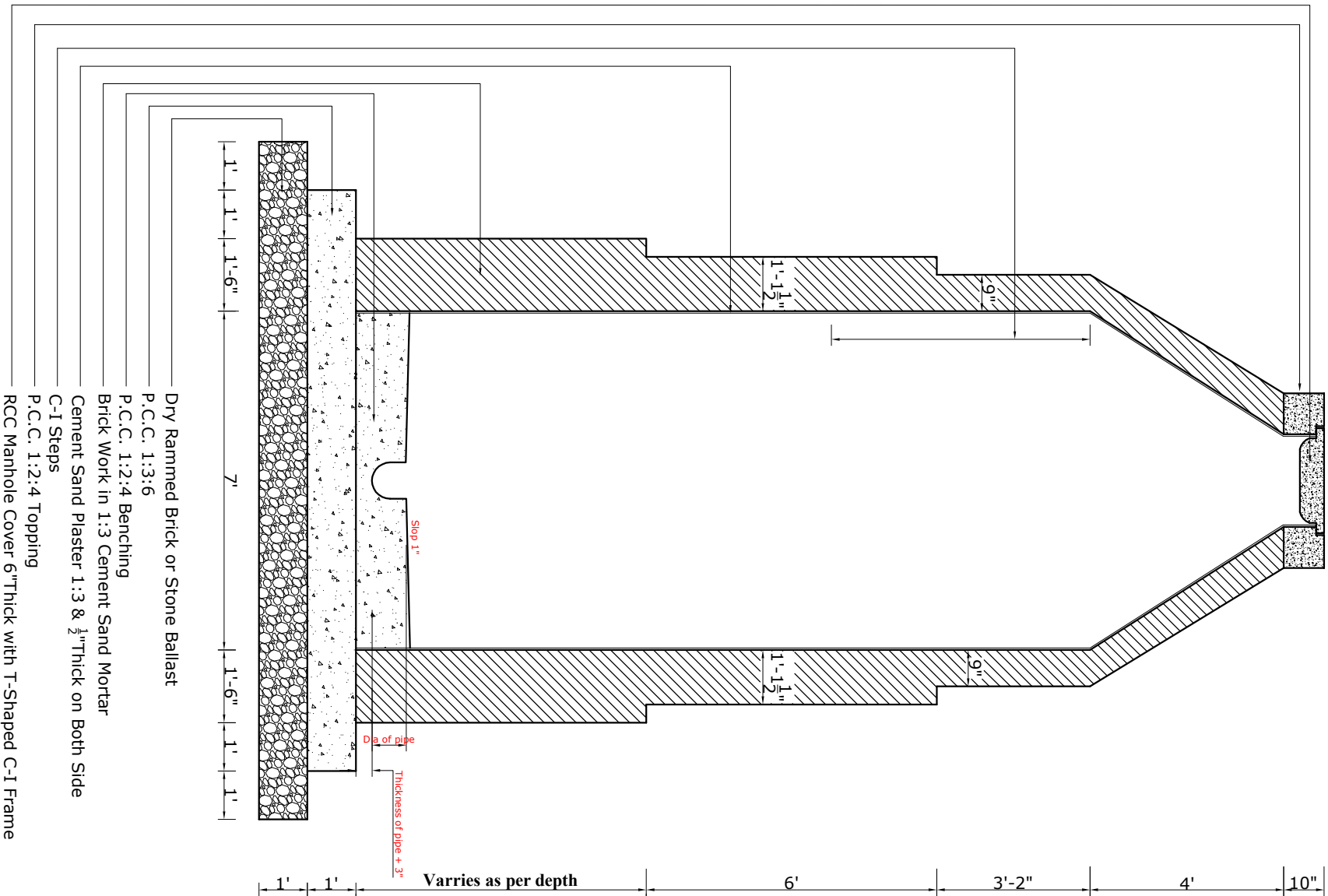


**Typical X-Section of Manhole for Up to 20Ft Depth.**  
**( FOR 30" TO 42" DIA )**

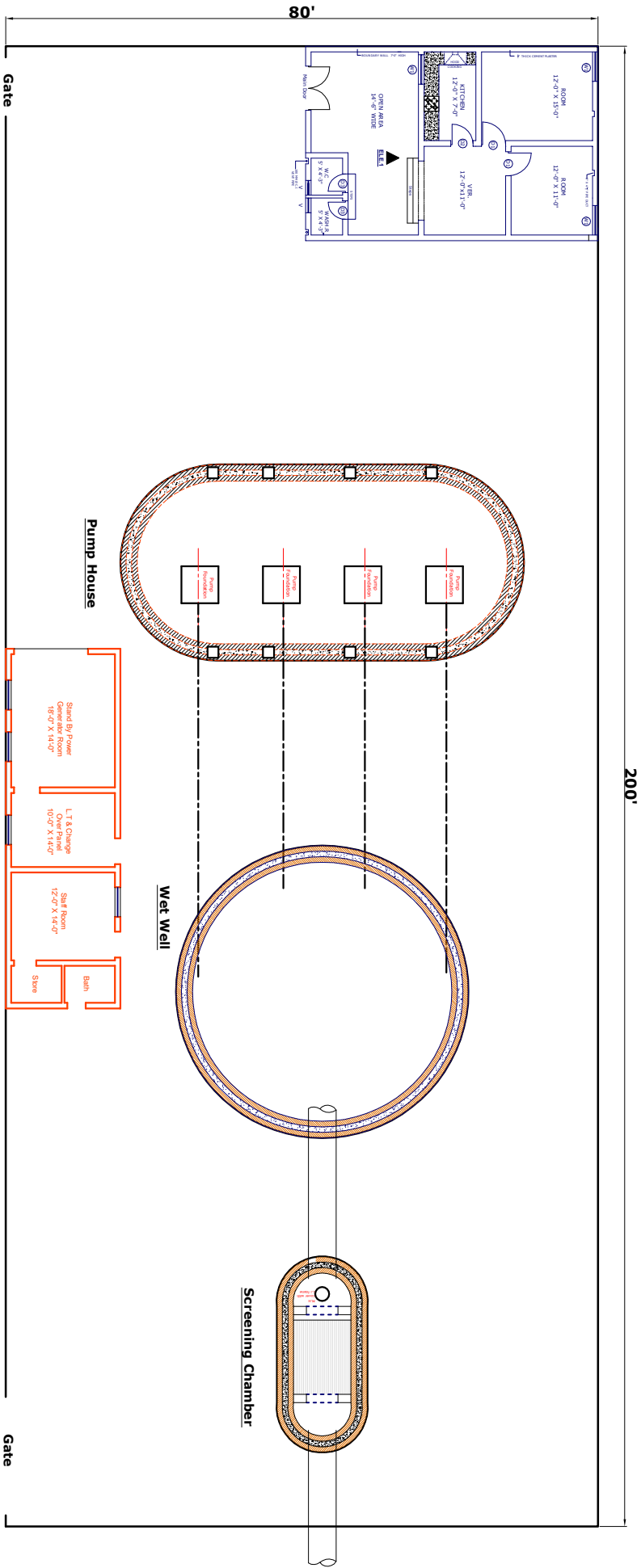




**Typical X-Section of Manhole for Up to 20Ft Depth.**  
( FOR 48" TO 60" DIA )

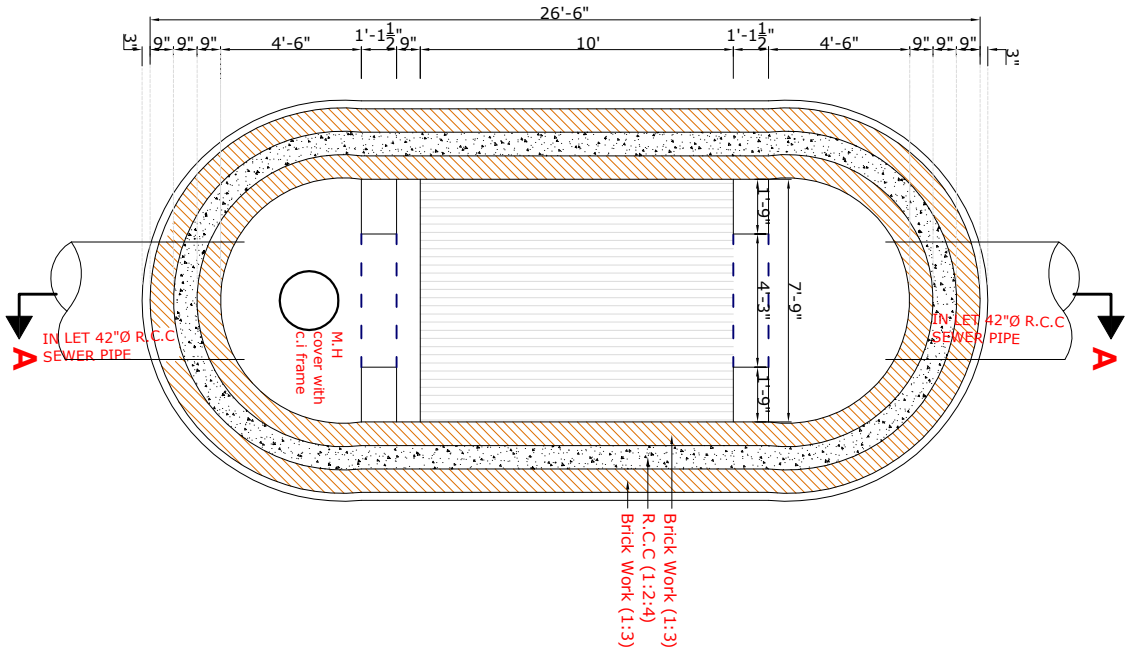


Layout Plan of Disposal Works Gojra City

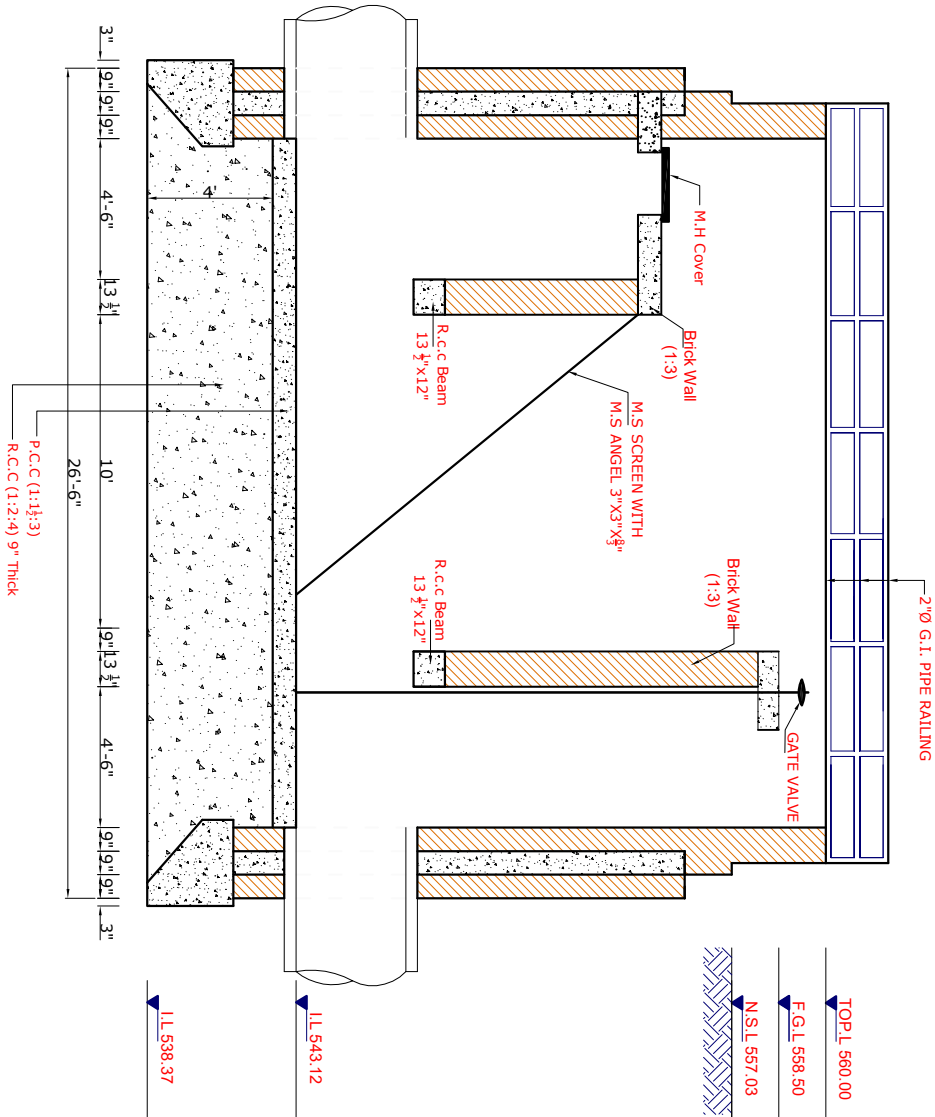


CONSTRUCTION OF SCREENING CHAMBER FOR GOJRA CITY

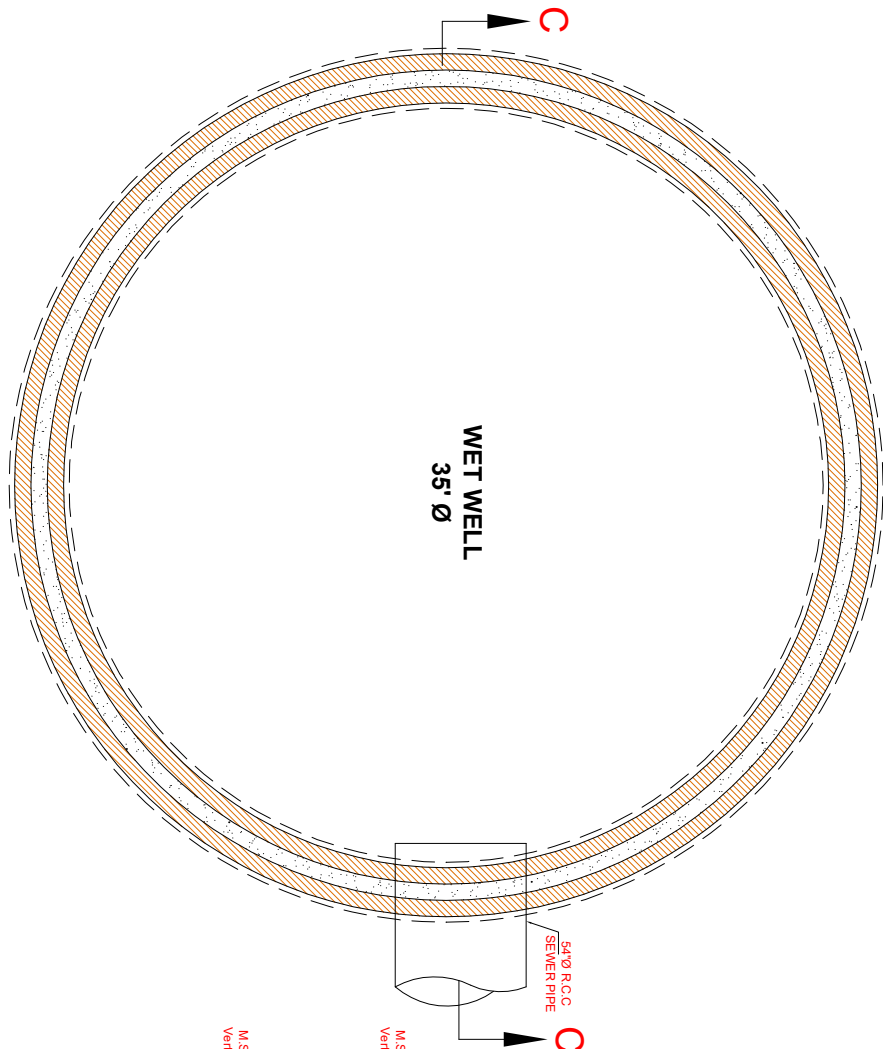
PLAN SCREENING CHAMBER



SECTION OF SCREENING CHAMBER A-A



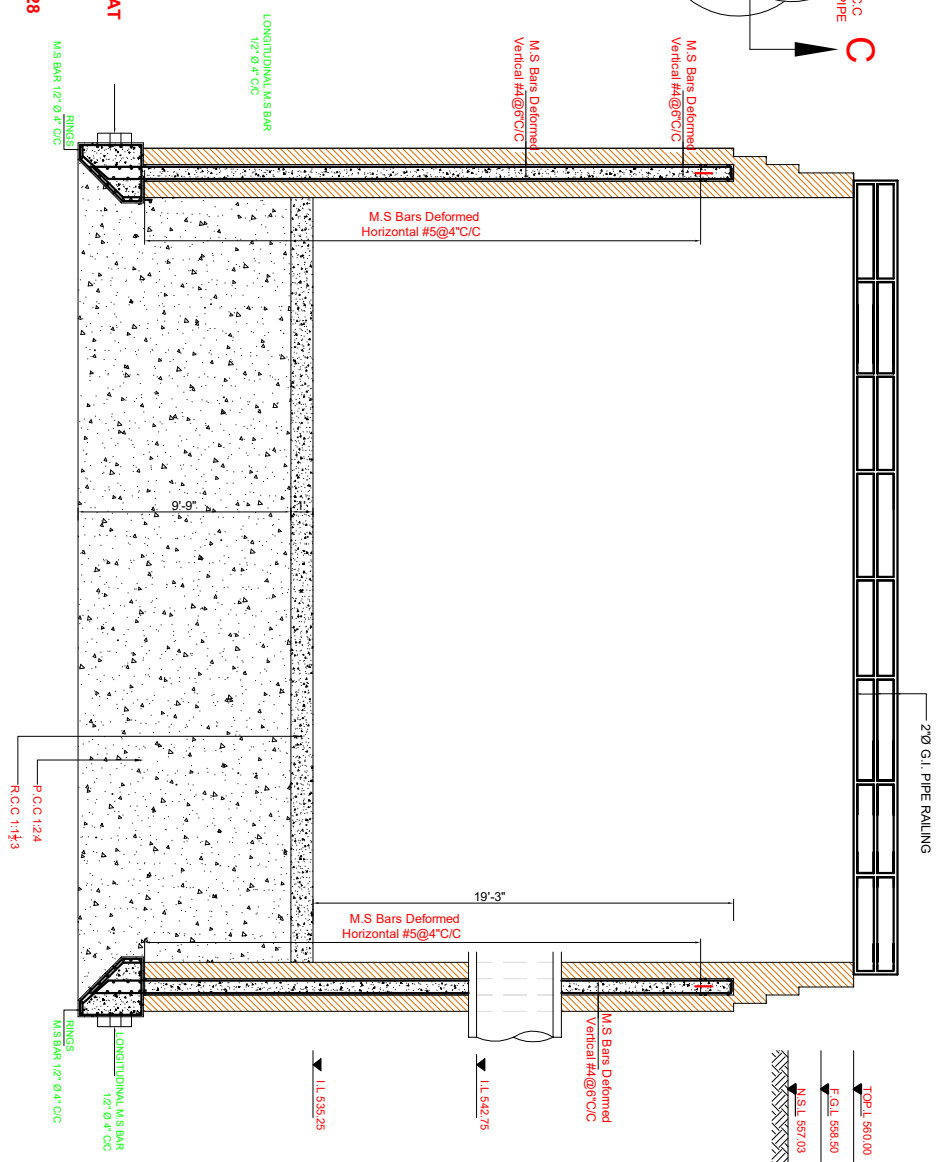
# PLAN AND SECTION OF WET WELL FOR GOJRA CITY



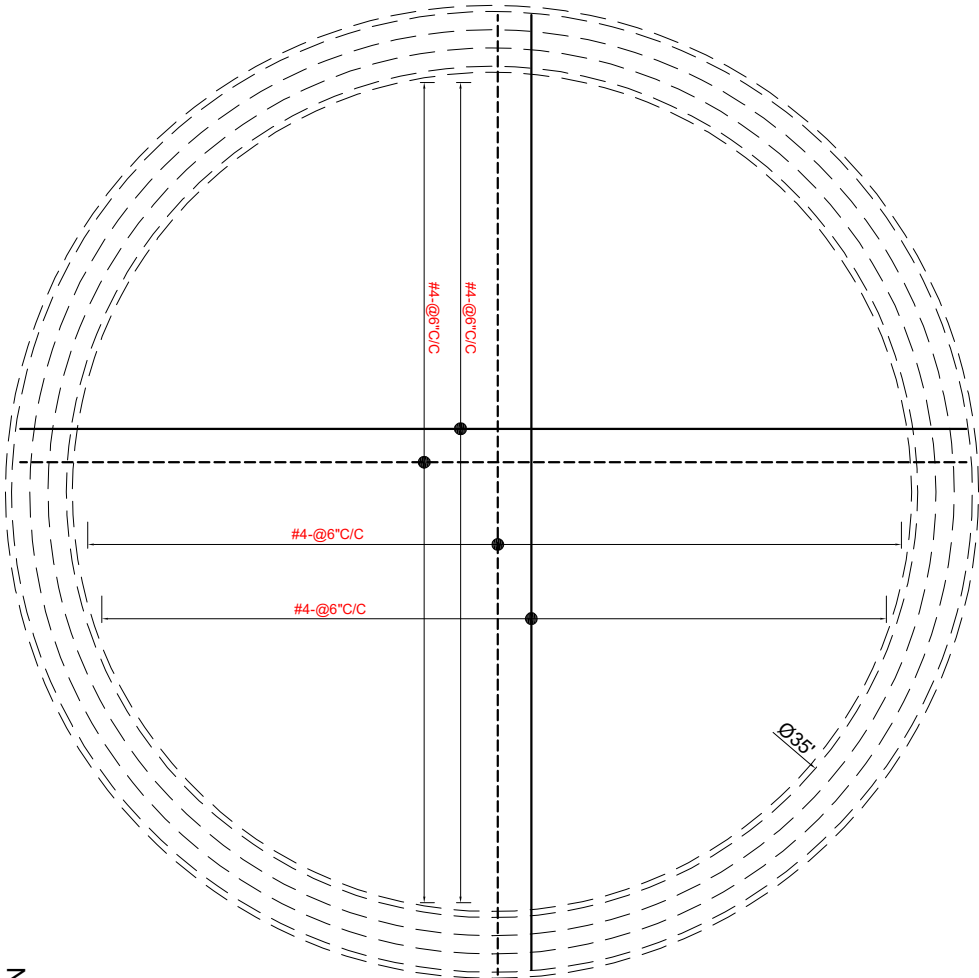
## PLAN OF WET WELL

**NOTE:-**

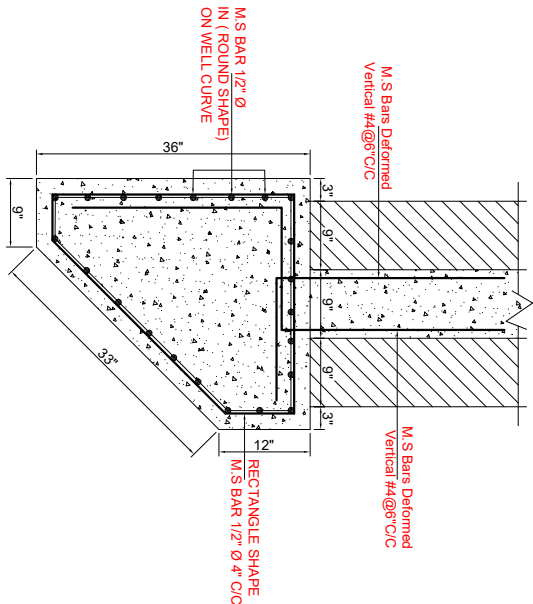
1. ALL DIMENSION IN FEET AND INCHES.
2. THE MINIMUM COMPRESSIVE CYLINDER STRENGTH OF REINFORCED CONCRETE SHALL BE 3000 PSI AT 28 DAYS.
3. THE REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM DESIGNATION A615-GRADE 40
4. THE MINIMUM COMPRESSIVE CYLINDER STRENGTH OF BLINDING CONCRETE SHALL BE 2000 PSI AT 28 DAYS.
5. CLEAR COVER TO REINFORCEMENT SHALL BE
  - a. EXTERNAL FACED  $1\frac{3}{4}$ " to 2"
  - b. FOR SLABS AND STAIR ETC. 1" to  $1\frac{3}{4}$ "
6. THE CONTRACTOR MUST MAKE SURE THAT ALL ITEMS TO BE EMBEDDED IN CONCRETE ARE SECURE AT PROPER LOCATION BEFORE CONCRETING.



## **SECTION C-C**



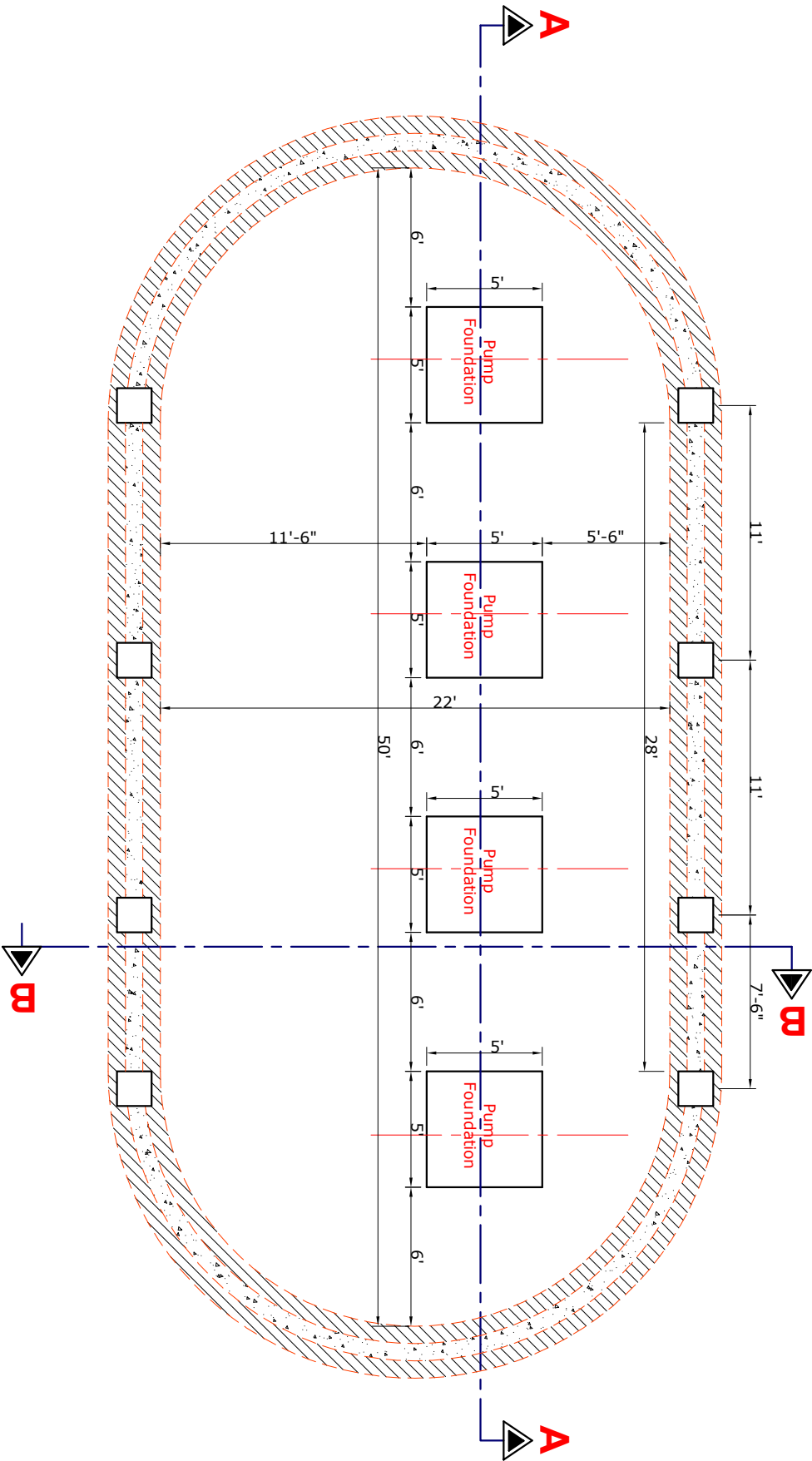
**Reinf : PLAN OF WET WELL**



**DETAIL OF M.S BAR ( RECTANGLE SHAPE )  
ON WELL CURVE ANGLE 3"X3"X4"**

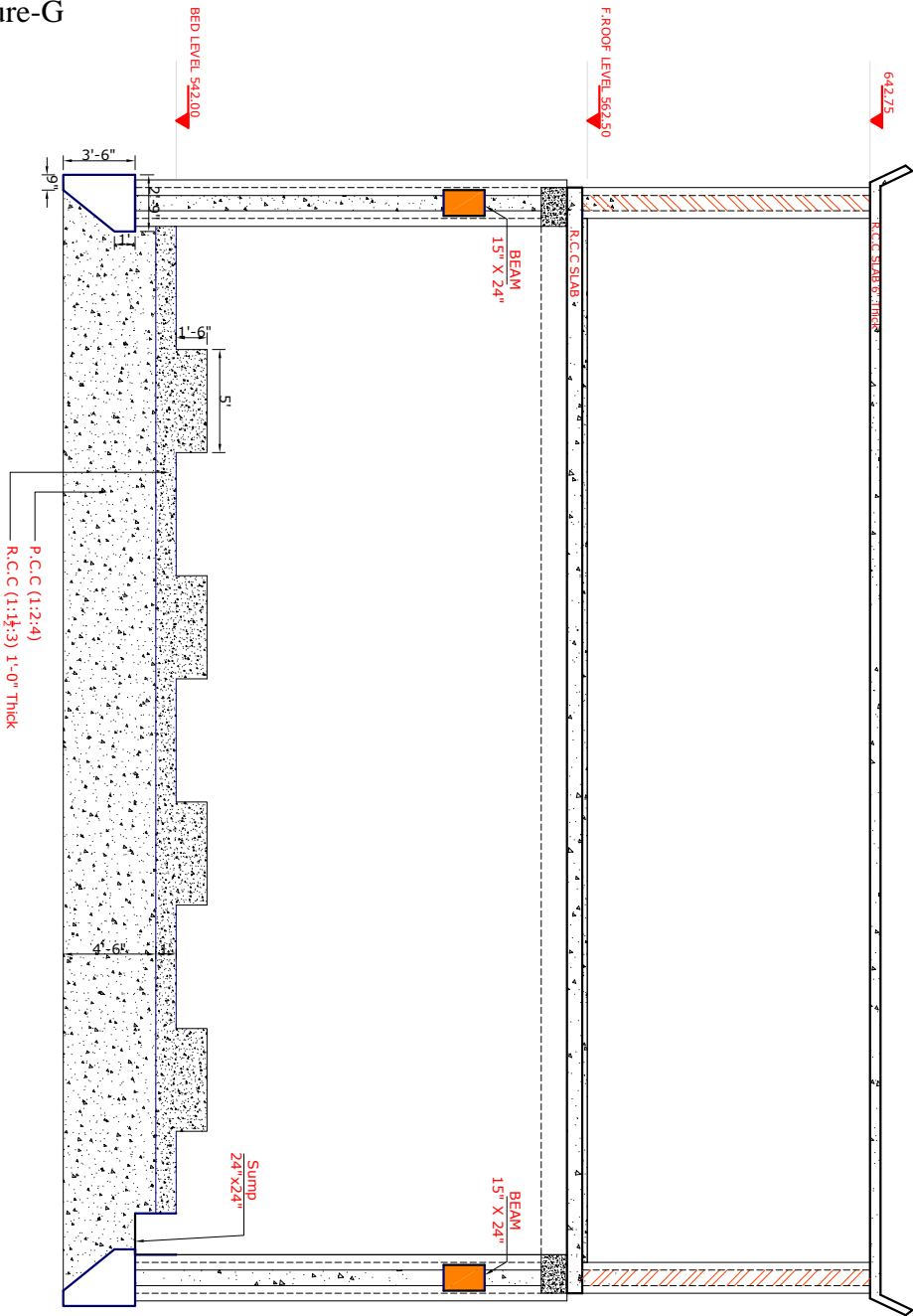
**NOTE:-**

1. ALL DIMENSION IN FEET AND INCHES.
2. THE MINIMUM COMPRESSIVE CYLINDER STRENGTH OF REINFORCED CONCRETE SHALL BE 3000 PSI AT 28 DAYS.
3. THE REINFORCINGSTEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM DESIGNATION A615-GRADE 40
4. THE MINIMUM COMPRESSIVE CYLINDER STRENGTH OF BLINDING CONCRETE SHALL BE 2000 PSI AT 28 DAYS.
5. CLEAR COVER TO REINFORCEMENT SHALL BE
  - a, EXTERNAL FACED 1 1/2" to 2"
  - b, INTERNAL FACED 1 1/2" to 2"
  - c, FOR SLABS AND STAIR ETC. 1" to 3/4"
6. THE CONTRACTOR MUST MAKE SURE THAT ALL ITEMS TO BE EMBEDDED IN CONCRETE ARE SECURE AT PROPER LOCATION BEFORE CONCRETING.

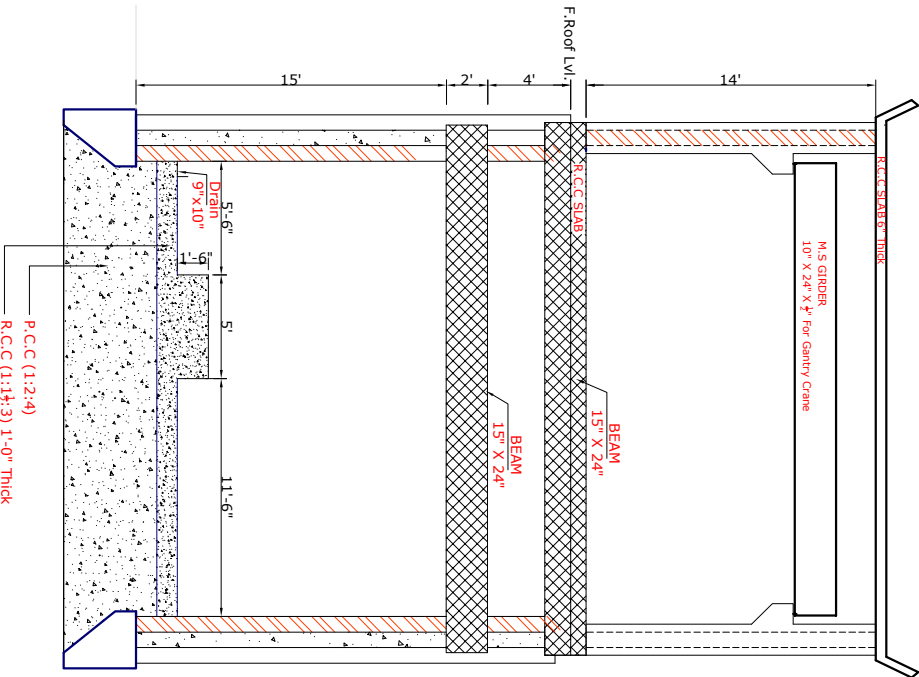


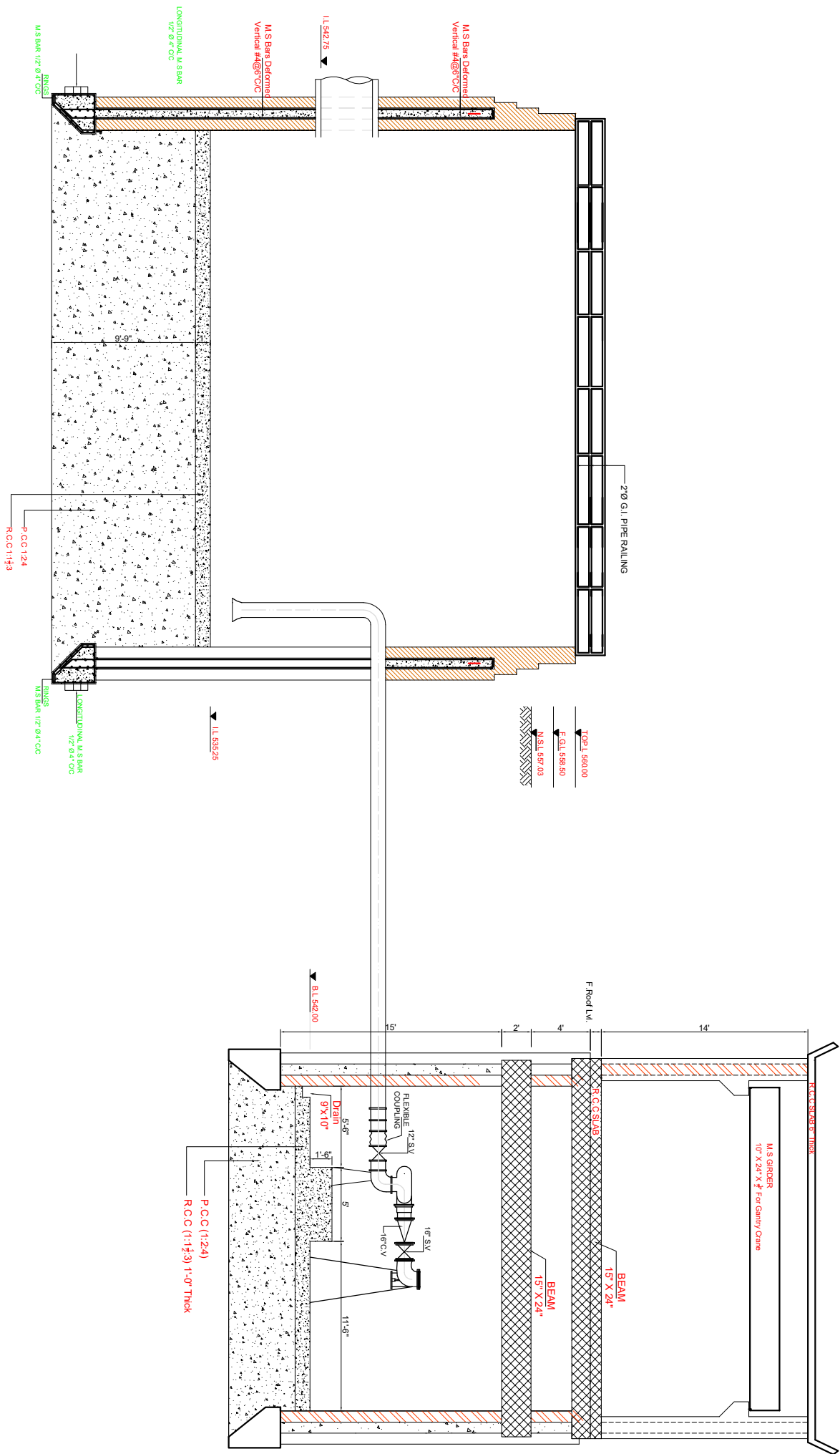
PLAN OF PUMP HOUSE AT DISPOSAL WORKS GOJRA CITY

SECTION A-A PUMP HOUSE

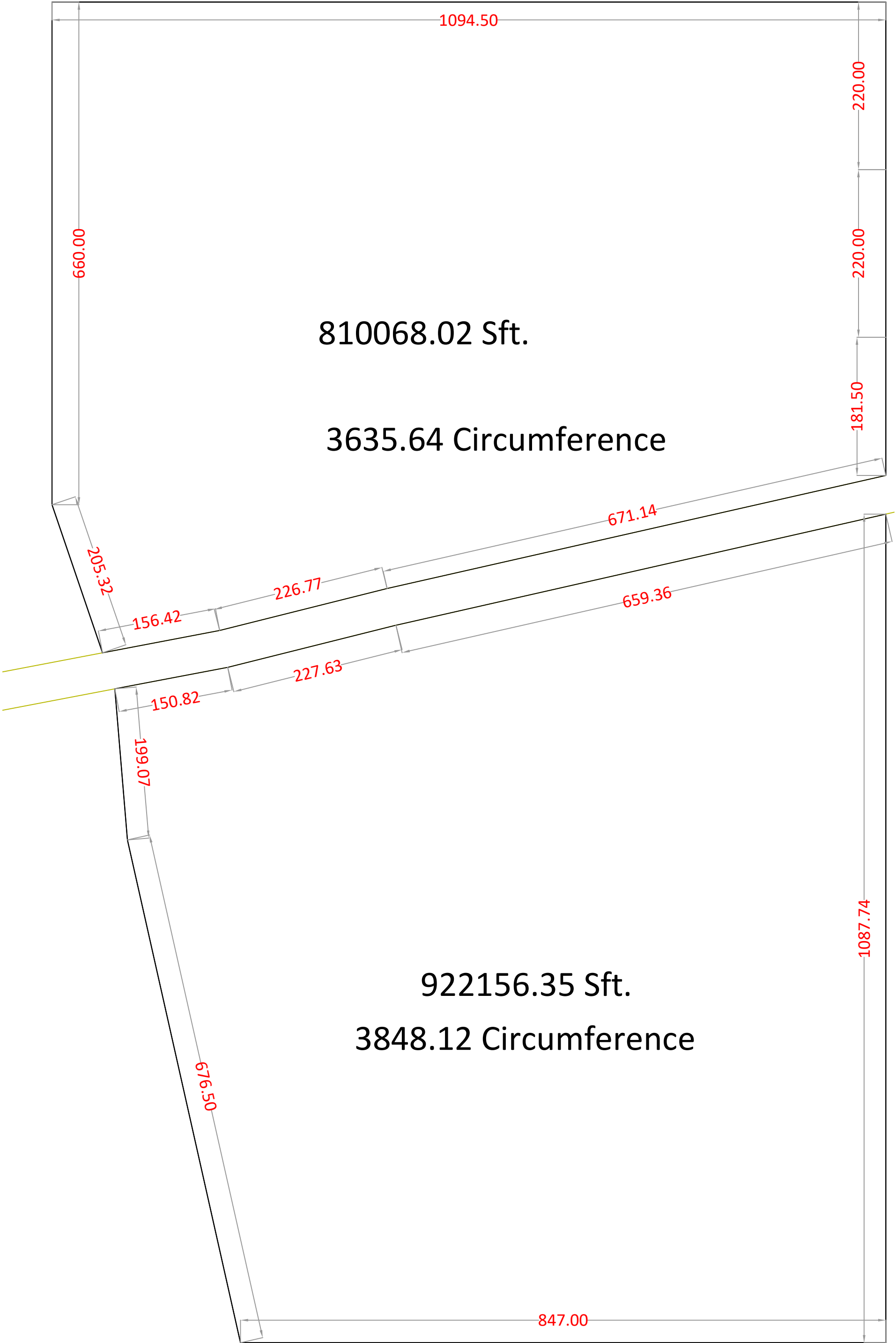


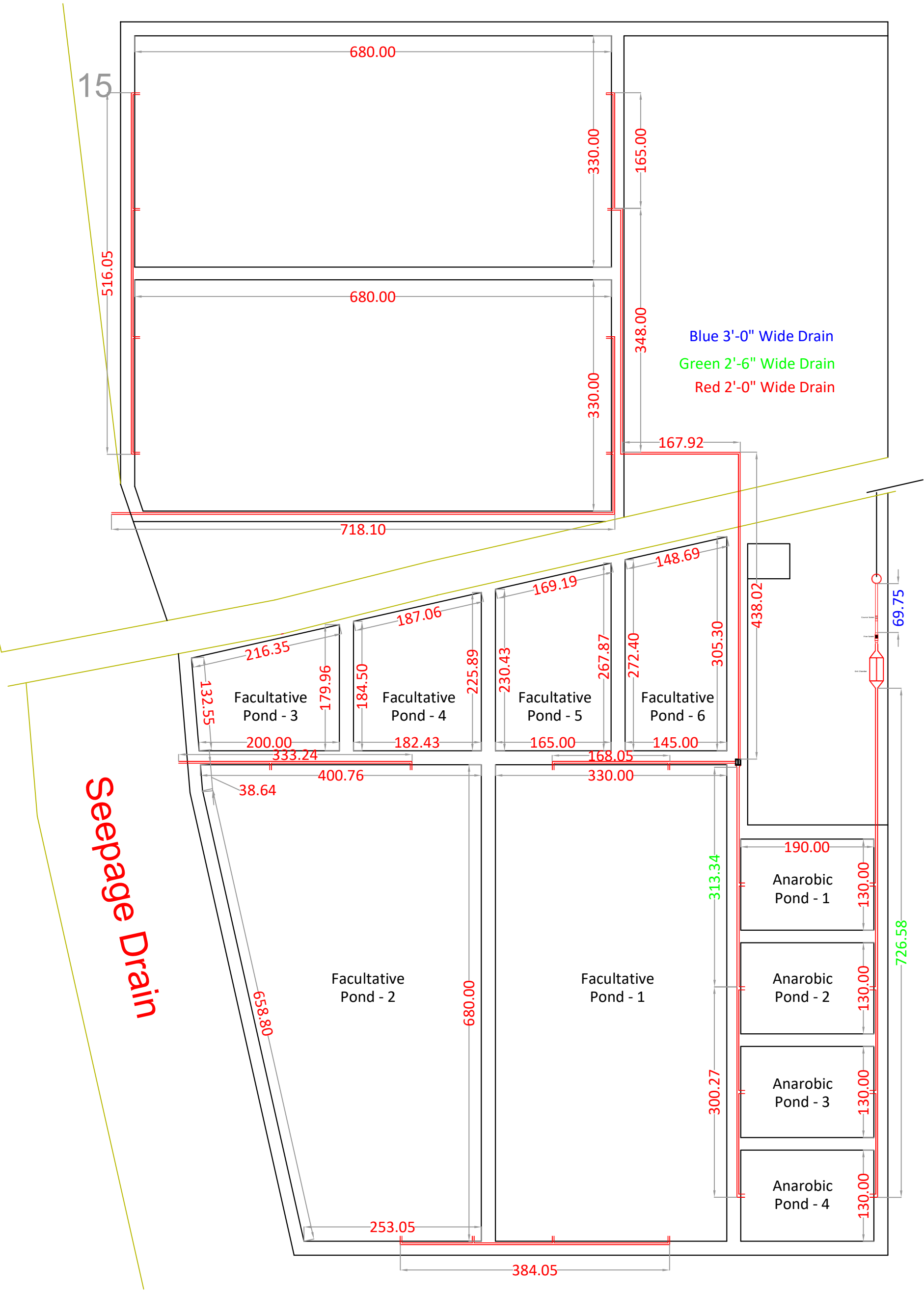
SECTION B-B PUMP HOUSE







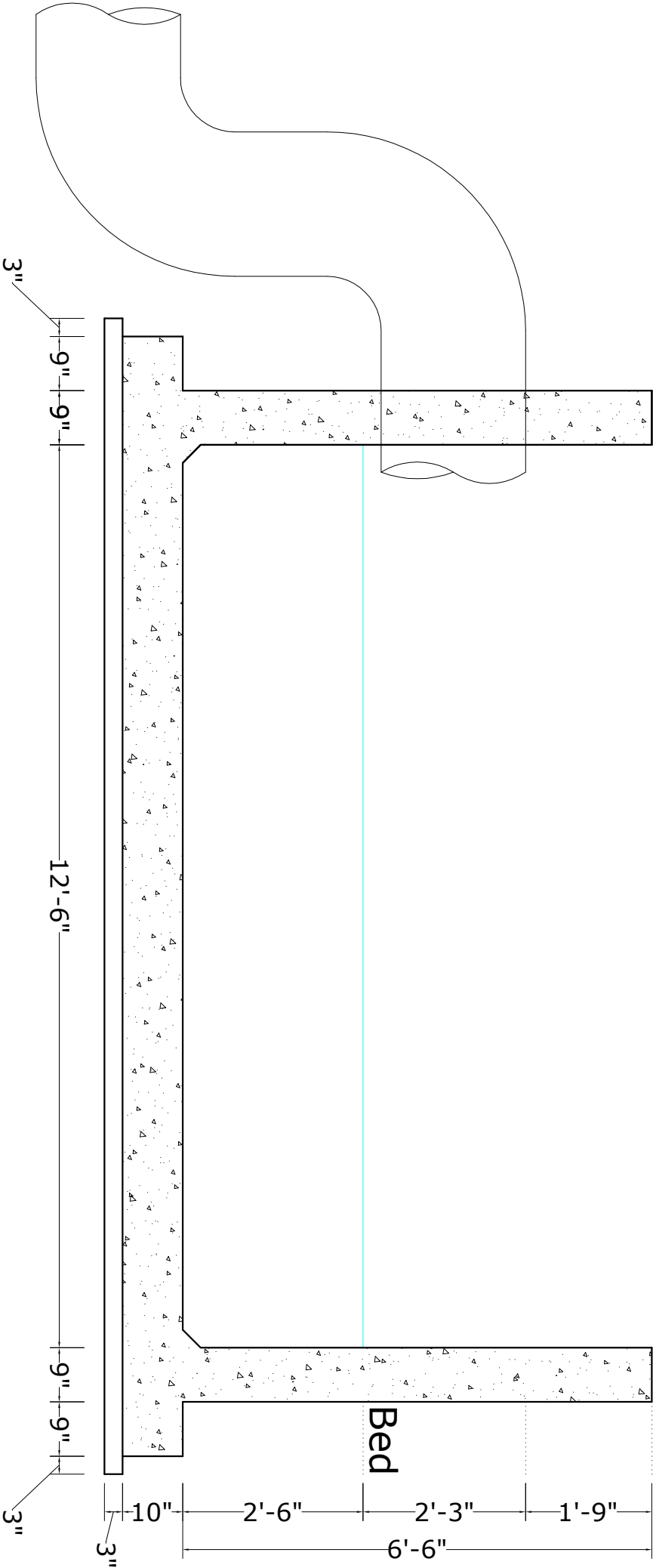




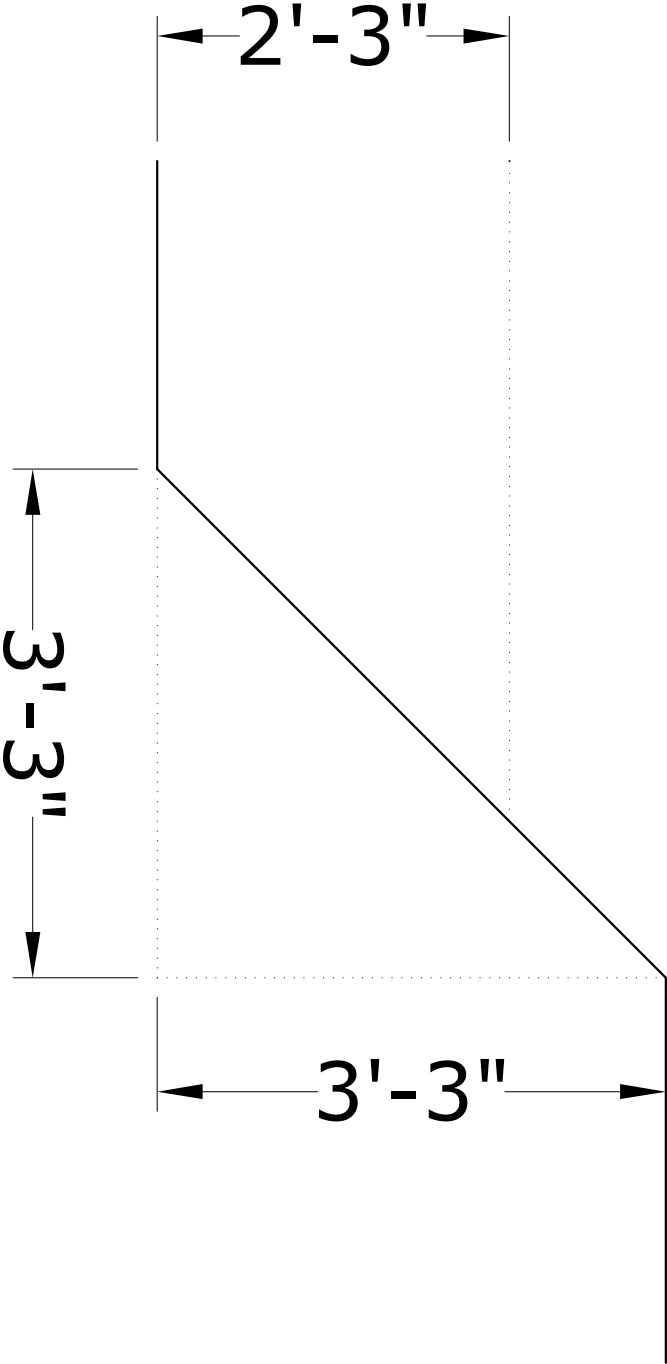


**GOJRA LAND**  
Area Statement  
Total Area is 809154 + 923209=1732363 SFT  
Or 39 Acer 6 kanal

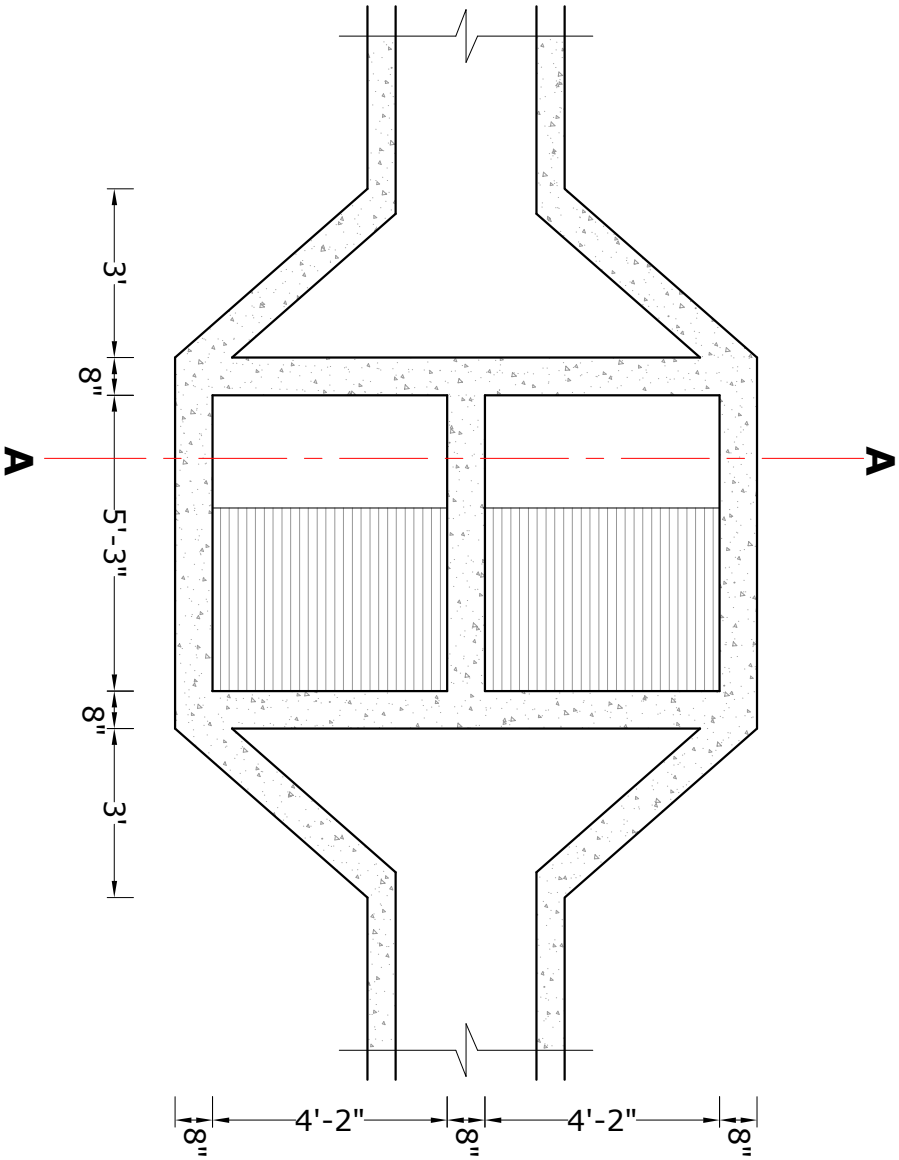
**Collection Pit / Chamber**



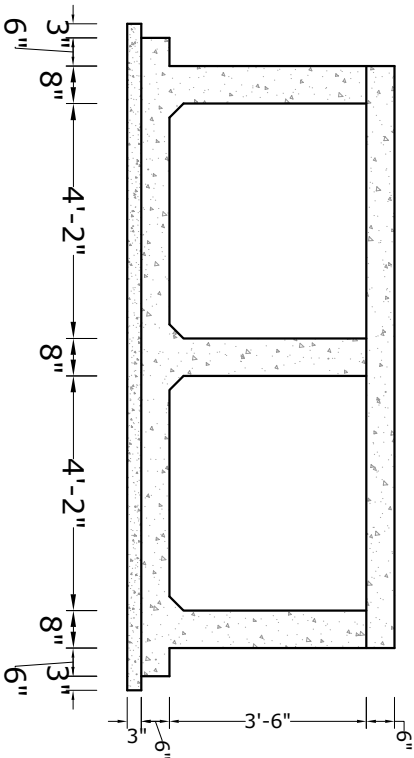
**Course Screen**



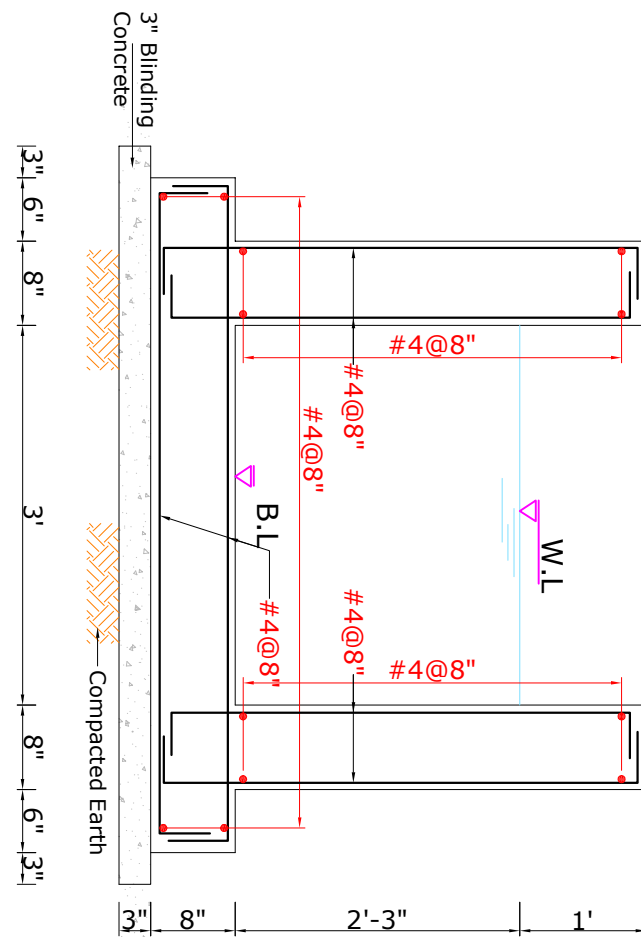
**Plan and Section of Fine Screen**



**X-Section of A-A**

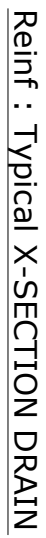


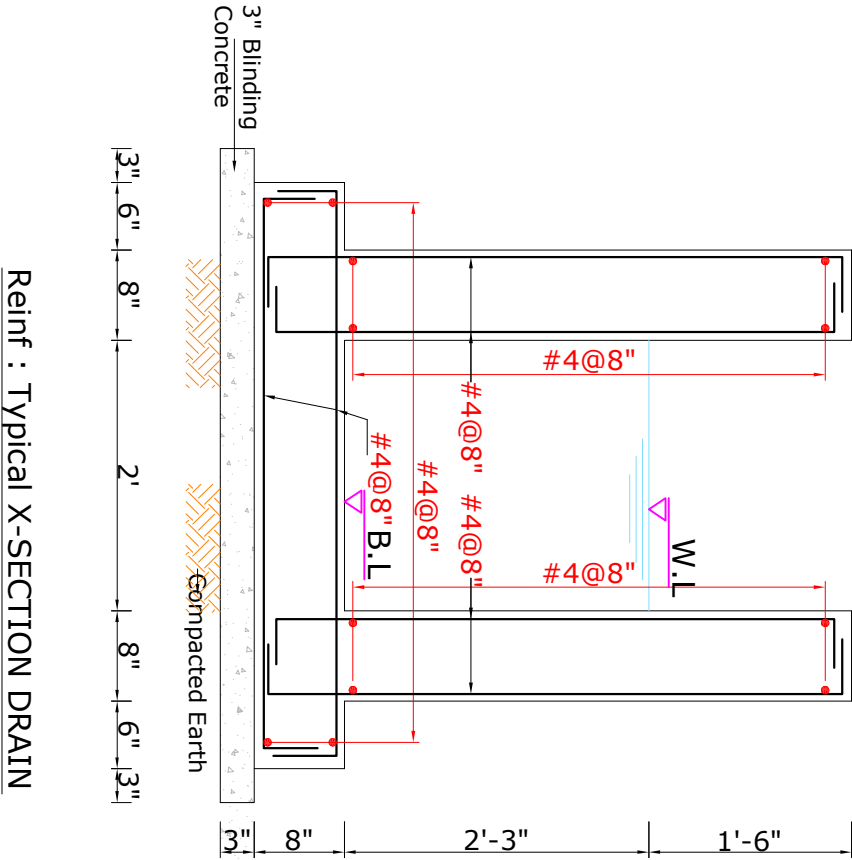
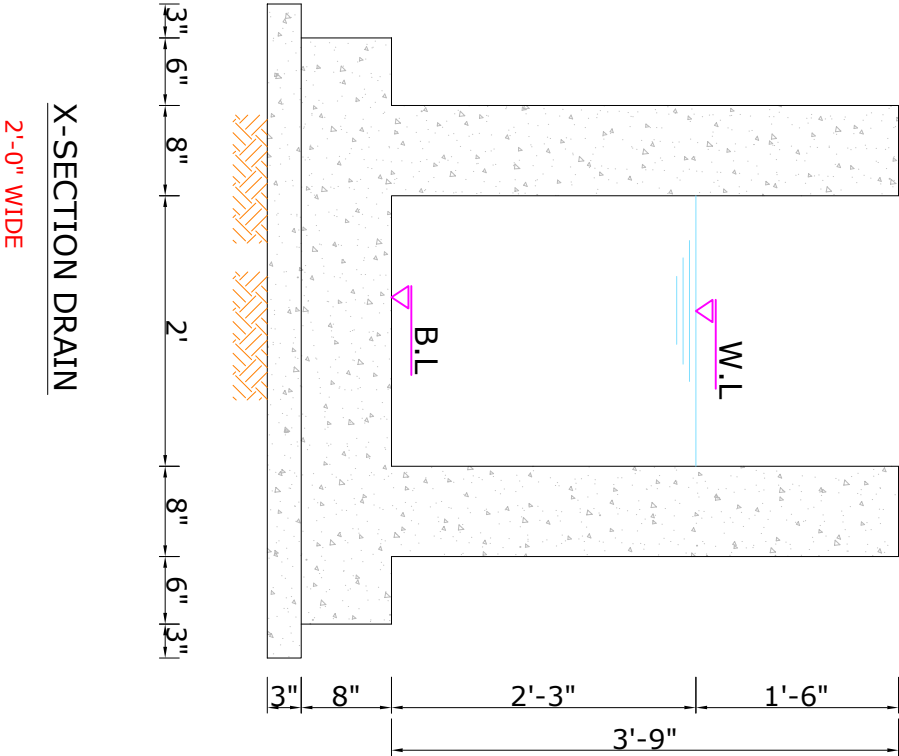
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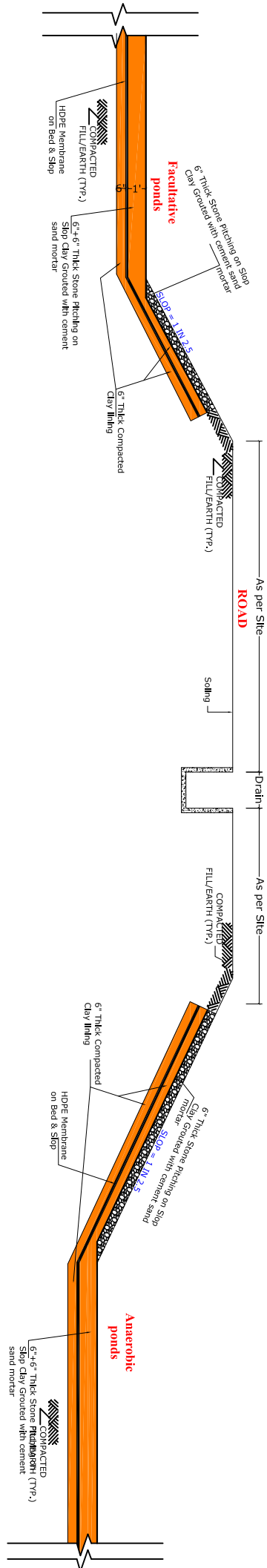
Reinf : Typical X-SECTION DRAIN

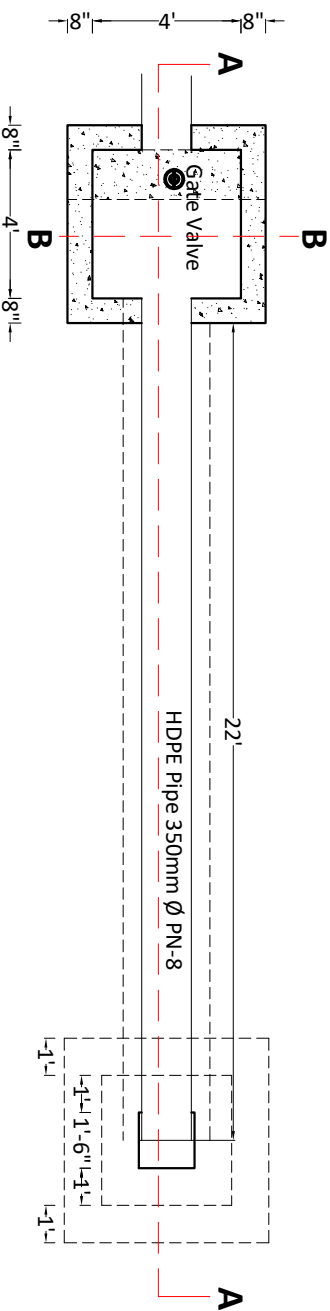




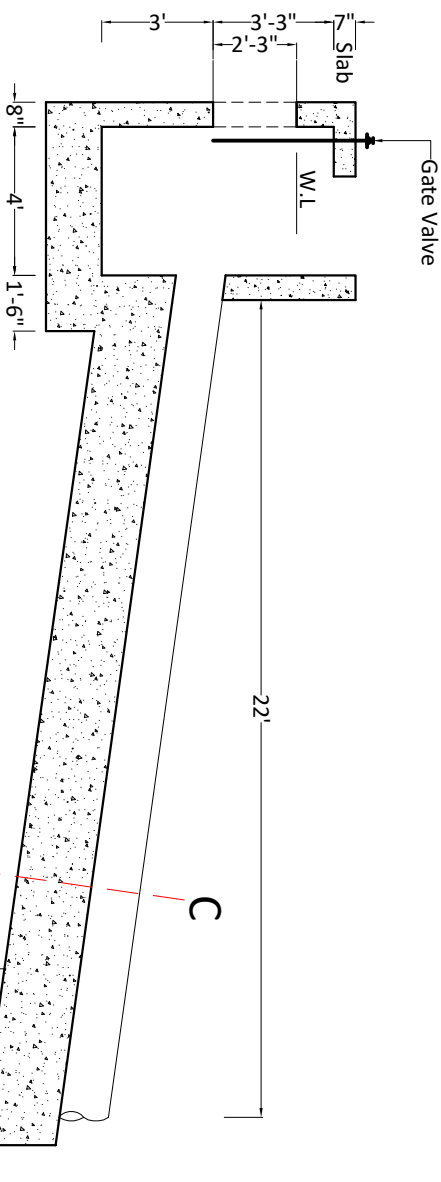


## X-SECTION OF ANAEROBIC EMBANKMENT & FACULTATIVE PONDS

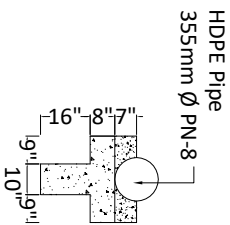




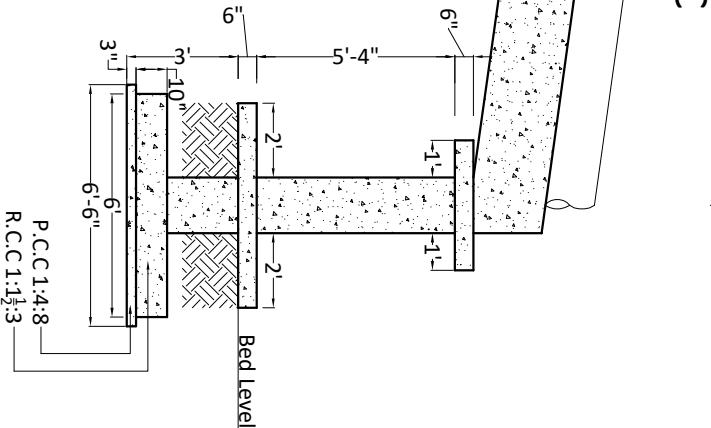
Plan of Inlet Chamber



X-Section at A-A

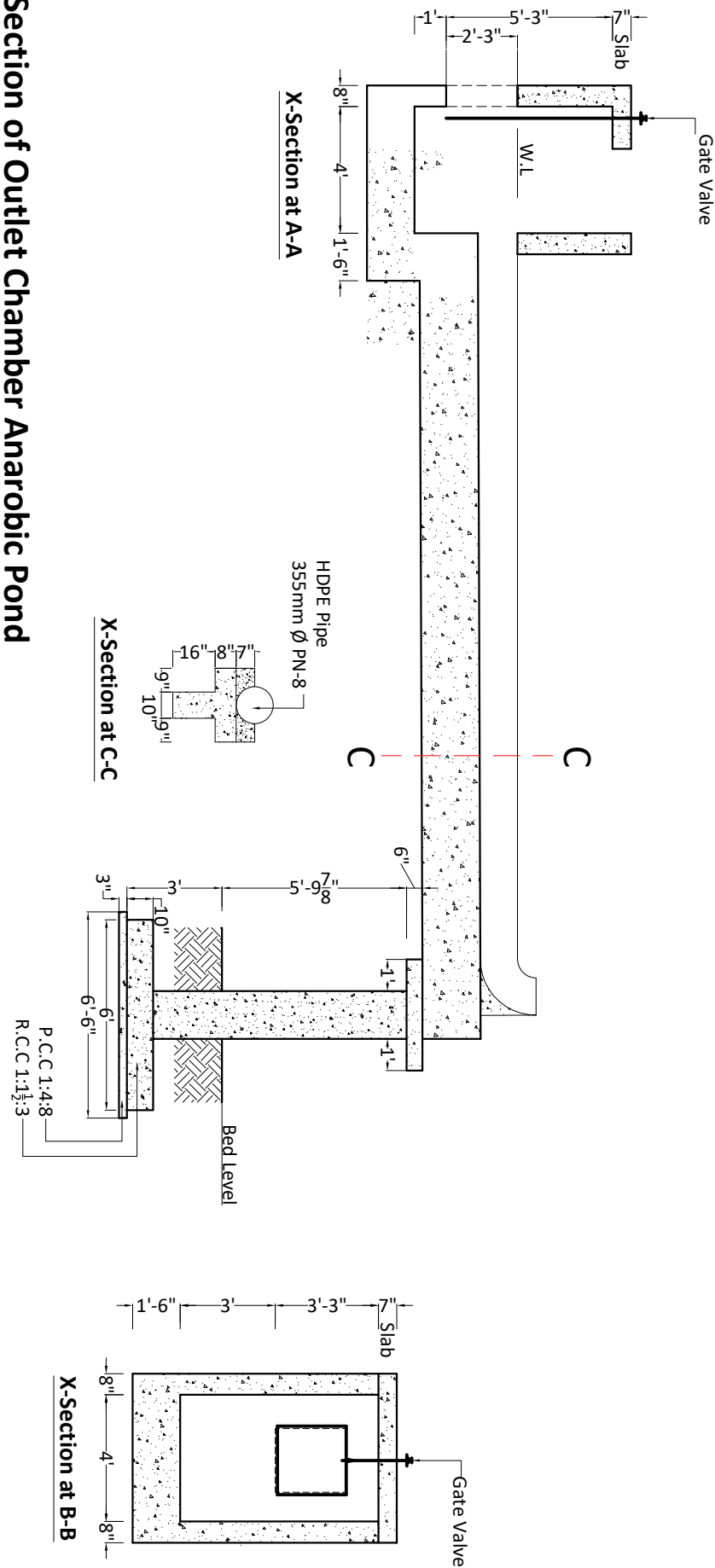
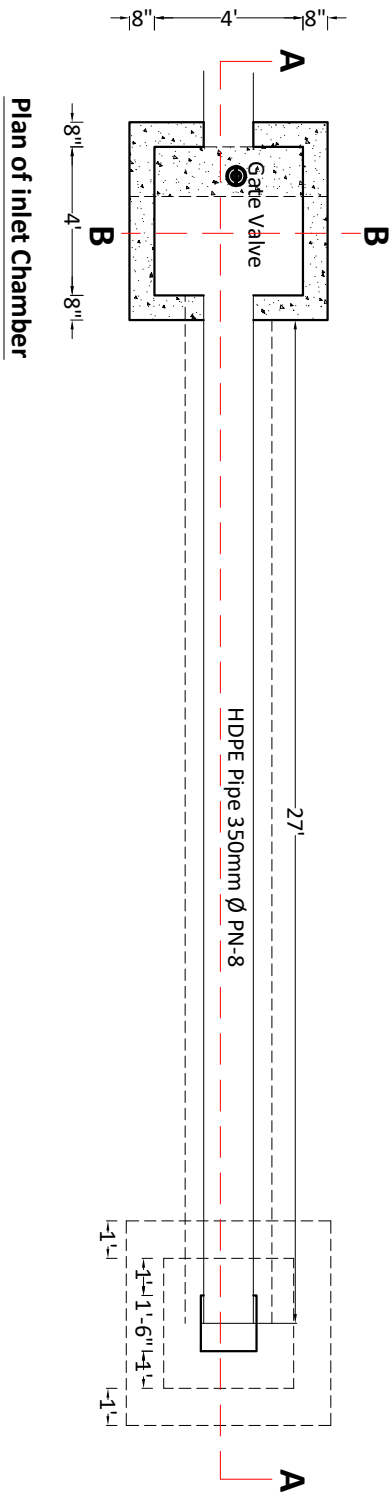


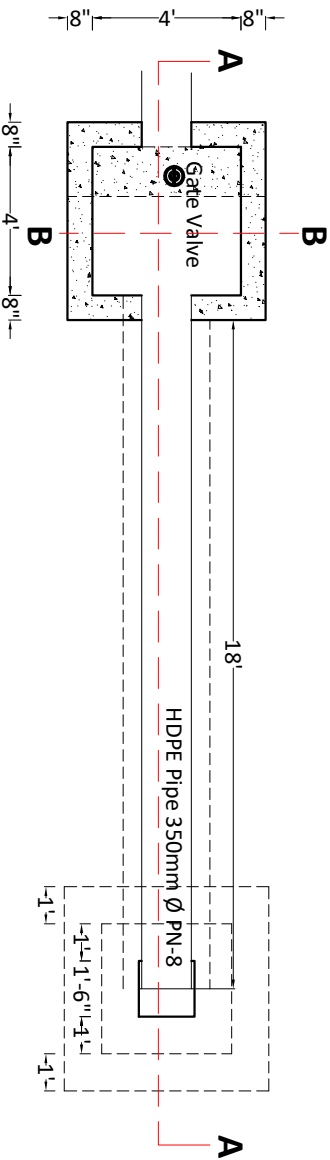
X-Section at C-C



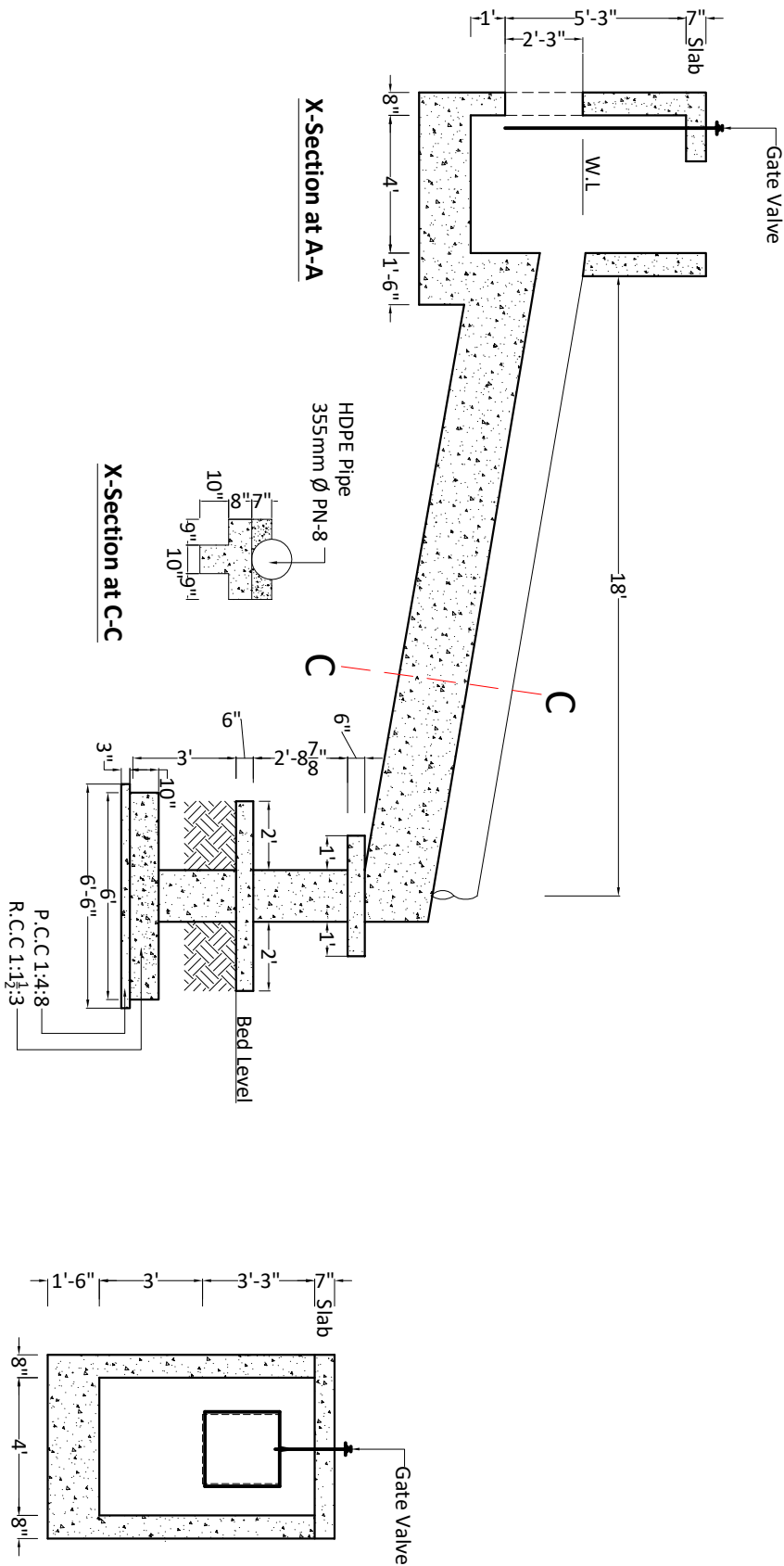
X-Section at B-B

Plan & X-Section of Inlet Chamber Anarobic Pond

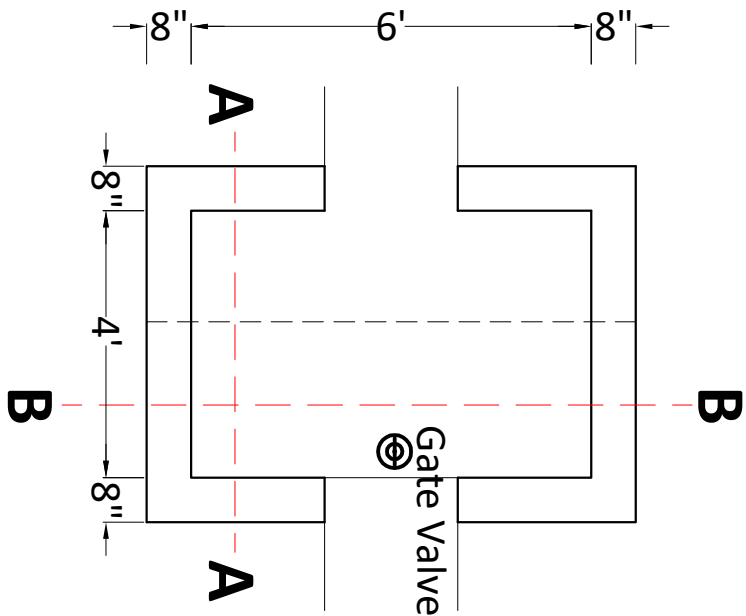




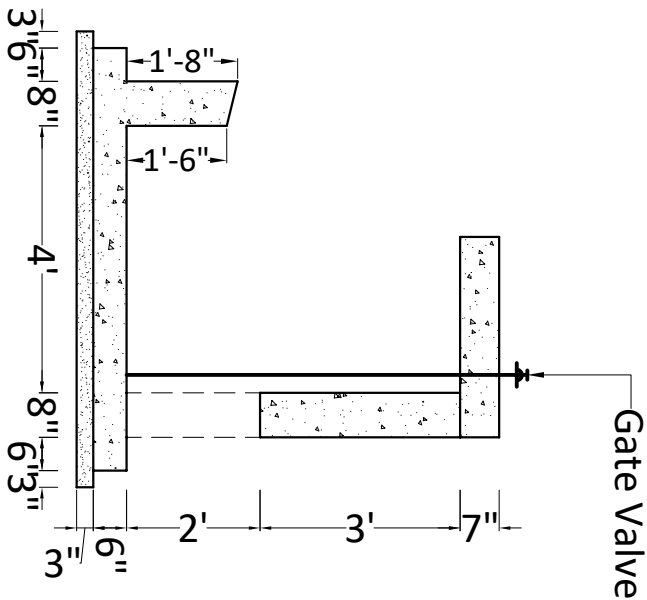
Plan of Inlet Chamber



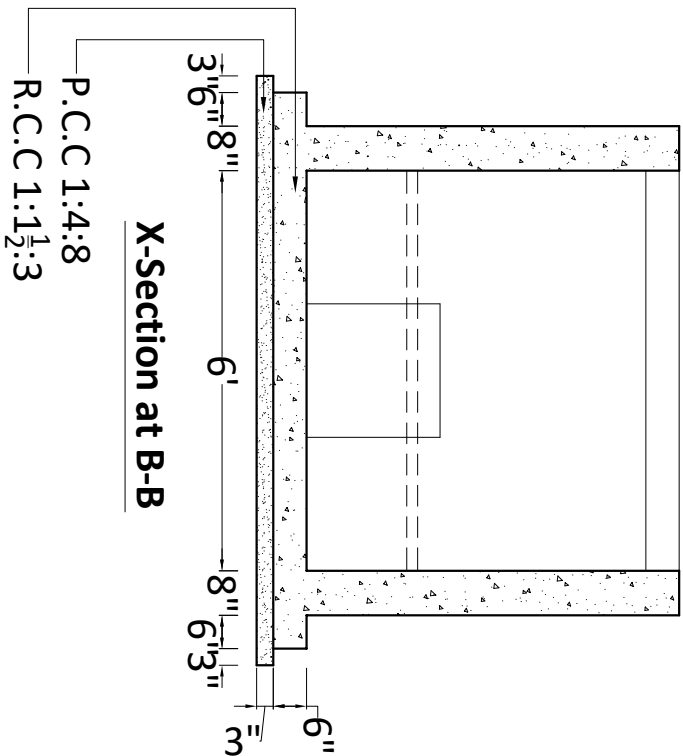
Plan & X-Section of Inlet Chamber Anarobic Pond



**Plan of Facultative Inlet Chamber**



**X-Section at A-A**



**X-Section at B-B**